CLEAN AIR ACT AMENDMENTS

HEARINGS

BEFORE THE

SUBCOMMITTEE ON
OVERSIGHT AND INVESTIGATIONS

OF THE

COMMITTEE ON COMMERCE
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTH CONGRESS

FIRST SESSION

ON

INSPECTION AND MAINTENANCE PROGRAMS

MARCH 23 AND 24, 1995

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CLEAN AIR ACT AMENDMENTS
Inspection and Maintenance Program

THURSDAY, MARCH 23, 1995

HOUSE OF REPRESENTATIVES,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2322 Rayburn House Office Building, Hon. Joe Barton (chairman) presiding.

Members present: Representatives Barton, Cox, Greenwood, Crapo, Burr, Frisa, Wyden, Waxman, Eshoo, Bliley and Dingell.

Also present: Representatives Bilbray, and Longley.

Staff present: Stephen Sayle, majority counsel and Reid Stuntz, minority general counsel.

Mr. BARTON. The subcommittee will come to order. Today the subcommittee will continue a series of hearings on the effectiveness of the Clean Air Act.

Specifically, today and tomorrow, the subcommittee will be receiving testimony from witnesses on the enhanced inspection and maintenance, I/M, program mandated under the 1990 Clean Air Act Amendments and the accuracy of the computer models used by the Environmental Protection Agency to predict pollution reductions of the I/M program.

It is the subcommittee's intention to approach the Clean Air Act from the perspective of what rational steps can be taken to truly utilize good old-fashioned common sense and technological ingenuity. I am encouraged to hear of President Clinton's intention to streamline and revisit the EPA regulatory process. The Chair would like these hearings to provide the administration the specifics to set in motion the call to action.

I would like to borrow a line from the President's speech last week, announcing his regulatory reinvention initiative at EPA for us all to keep in mind as we begin to reevaluate the Clean Air Act, "The philosophy that guided these changes is pretty simple—protect the people, not bureaucracy, promote results, not rules, get action, not rhetoric. Whenever possible, try to embrace common sense."

Mr. President, I offer you no better place than to start rethinking a regulation that affects millions of Americans than what we're going to be looking at today and tomorrow, and that's the I/M program. Before we spend another dime of Federal, State, local or taxpayers' own money on a program designed to reduce pollution in our dirtiest cities, assurances are needed that the program implemented is cost-effective and actually produces results.

The model used to justify the I/M program must be accurate and all the available technologies that are actually utilized should be available to all the States. It may be necessary to change some law to make these requirements possible.

Having said that, it is my intention to continue to work with the EPA and others within the existing parameters of the Clean Air Act and encourage them to use the discretion given to them by the act to effectively implement these programs.

Today we are going to hear real world evidence, real world evidence from different researchers questioning whether the I/M programs are having much of an impact in mobile source emissions reductions. Dr. Doug Lawson, of DRI, who cannot be with us today, has got some evaluations about the programs out in California. Dr. Donald Stedman of the University of Denver and Drs. Kittelson and Scherrer of Minnesota will present separate types of real world evidence casting doubt on existing I/M programs and questioning whether new centralized testing programs by EPA would be any more effective.

Dr. Stedman, drawing from approximately 5 million measurements from an infrared remote sensing device, states that no differences can be detected from vehicles in either centralized or decentralized I/M programs and programs with no inspection and maintenance at all. Drs. Kittelson and Scherrer, using the same sensors EPA uses to determine if an area is meeting attainment for the Clean Air Act in Minneapolis, determined that 5 years prior to an I/M program being established and 2½ years into a centralized program, there was only a 1 percent drop in carbon monoxide. EPA had predicted the program would result in a 30 percent reduction.

Dr. Lawson, who, again, is not going to be here today, using roadside pullover data, found that the California smog check program was having little effect at actually cleaning up cars. There are also many questions about the credits that the EPA has allowed for decentralized testing. They're only given a 50 percent credit and they have not allowed remote sensing any credit at all. So we're going to get into some of those questions.

With the Clean Air Act as an important and vital law that has been responsible for improving and ensuring the health and well being of all Americans, it is absolutely imperative that we make it as effective a law as possible. The full committee, as some in this room have witnessed and lived through, deliberated for many years before amending the act in 1990. It is the purpose of this subcommittee and its proceedings to exercise the same attention and due diligence in these hearings that have been exercised in the past.

The chairman's goal is to rationally and decisively oversee the Clean Air Act to ensure that it is faithfully and properly implemented in the most effective and efficient way possible. The next 2 days of testimony should put the subcommittee well forward towards meeting that goal.

At this time, the Chair would now like to recognize the distinguished gentleman from Oregon, the ranking member of the subcommittee, for any opening statement that he may wish to make.

Mr. WYDEN. Thank you very much, Mr. Chairman. Mr. Chairman, today's hearing focuses on one of the most important and also

one of the most controversial provisions of the 1990 Clean Air Act Amendments; specifically, motor vehicle emissions inspection and maintenance programs.

When these programs are effective, auto emissions can be identified and controlled in a cost-effective manner and non-attainment areas will be better positioned to meet air quality standards and to protect the public health.

At the same time, there have been criticisms of these programs because the implementation in a number of areas has caused inconvenience and hassle for the driving public.

Mr. Chairman, before getting into the substance of today's hearings, there are some institutional concerns that need to be raised. The minority is aware that the utilization of remote sensing technology to identify polluting cars is an especially important issue for you. We are aware that it is due to your efforts that the 1990 Clean Air Act Amendments included provisions for States to use remote sensing as part of their vehicle emissions testing program. For this reason, the minority of this subcommittee has tried to bend over backwards to accommodate your interests in seeing extensive discussions of the remote sensing issue at today's hearing.

However, with a heavy heart, I must say that this is no excuse, in my view, for the committee assembling the unbalanced panels that are before us today. When we began the first of these hearings on Clean Air Act implementation, I pointed out that the new Republican majority was having a bit of a growing pain problem as it assumed the leadership of this committee. We are sorry to say that these problems do not seem to be getting corrected.

Under Chairman Dingell's leadership, this subcommittee has always pursued investigations in a bipartisan and fair manner. The committee's exclusion of six of the nine witnesses the minority has asked to be included on the witness list does not live up to the subcommittee's traditional bipartisan standards of fairness. I hope the subcommittee does not intend to make it a practice to exclude witnesses who can provide relevant testimony, especially if the testimony bears on the critical question of whether problems with the Clean Air Act can be fixed administratively or whether legislation is needed to correct these problems.

Now, in several States, the early implementation of inspection and maintenance has, in fact, been rocky. The EPA, however, is making some midcourse corrections to try to get the program on track. EPA has begun to show flexibility by allowing States to suspend inspection and maintenance programs, by giving the State of New Jersey the same credit for its hybrid program as the Agency gives for a centralized program and by giving States with decentralized programs extra credit for supplementing their inspection programs with technician training and certification.

The Agency is also involved in the process of drafting a new inspection and maintenance rule that could provide needed additional flexibility. In light of these new developments, it does seem premature to conclude that legislation is the only possible solution. From what I've seen, inspection and maintenance is an example of a program where the problems could be fixed without legislation.

There is flexibility galore built into this provision of the statute. The act doesn't provide that IM240 or any other particular tech-

nology be used. It allows States to demonstrate that decentralized programs are as effective as the centralized. It specifically allows the States to use remote sensing as part of an inspection and maintenance program.

If there is any statutory constraint that is going to prevent the EPA from correcting problems with inspection and maintenance, it doesn't seem to me that it's likely to be in the Clean Air Act. To the contrary, it's more likely to come because of the regulatory moratorium and the restrictions on funding of inspection and maintenance implementation in the rescissions bill passed by this Congress, which could tie the EPA's hands and prevent the Agency from issuing new rules to address the problems that this committee is going to be discussing.

It is ironic that at the same time some of my colleagues in the majority are criticizing EPA's implementation of the program, it also seems there is an effort to handcuff EPA by passing legislation that would prevent the Agency from fixing the problems with inspection and maintenance administratively.

In my view, the committee needs to be cautious about rushing to judgment of the inspection and maintenance program because of the potential consequences for manufacturers and other businesses. Many States have relied heavily on inspection and maintenance as a strategy to achieve clean air standards. In fact, my home State of Oregon and a number of other States voluntarily chose to incorporate enhanced emissions testing in the State implementation plans because they recognized this as a cost-effective approach.

If Congress were to adopt legislation that relaxes or even repeals emissions testing requirements, those States could be forced to impose even more burdensome requirements on business, which could stifle economic development and jobs.

A number of our businesses are becoming increasingly concerned about the potential impact of weakening emissions testing requirements. That's why six industry trade associations wrote to Administrator Browner last month to urge the Agency to retain, and I quote, "rigorous standards for vehicle emission program."

Mr. Chairman, I would ask that this industry letter could be included in the record.

Mr. BARTON. Without objection.

[The letter follows:]

February 1, 1995.

Carol M. Browner
Administrator
Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

DEAR ADMINISTRATOR BROWNER: We, the undersigned, are writing to urge the EPA to maintain appropriately rigorous standards for vehicle emissions I/M programs. Our associations, representing thousands of companies nationwide, actively supported the Clean Air Act of 1990 and centralized I/M programs utilizing the most effective emission inspection technology available.

Our industries already bear sizable cost burdens in order to comply with the 1990 Amendments. Any relaxation of emission control standards for mobile sources will most certainly result in additional controls and penalties extending to stationary source and area source parties. Such action ought to be viewed within the context of a sincere cost-benefit analysis on the part of the Environmental Protection Agency.

Smog is one of the most serious environmental and health problems faced by Americans today. Since automobiles account for some 50 percent of ozone-causing emissions and 90 percent of carbon monoxide emissions throughout the U.S., it is impossible to resolve our air quality problems without reducing automotive emissions. Industry sources have markedly reduced emissions these past 20 years. Reducing industrial sources of pollution further is a very costly and burdensome pollution control strategy, especially since additional controls would have to be imposed on already burdened small and large businesses (e.g., bakeries, dry cleaners, electric utilities, refineries, steel mills).

The amendments to strengthen vehicle inspection/maintenance performance standards were fashioned with health-based standards and innovative, market-based approaches to pollution reduction in mind. We encourage such "risk assessment" and cost-benefit for mobile source emission reduction, versus $10,000 to $20,000 per ton for stationary source reduction, should be foremost in public policy considerations.

Centralized I/M programs represent a cost-effective method for controlling pollution, while promoting economic growth, as compared to both decentralized I/M and programs that would necessitate the installation of additional controls on industrial sources.

We strongly urge you to retain the vehicle emission I/M standards which were set forth in the Clean Air Act Amendments of 1990. We believe any relaxation of these goals will surely lead to increased job losses among our member companies. We would be happy to provide you with the figures representing the costs which our industries have borne already in order to comply with the 1990 amendments. We believe in clean air. We also believe in reducing pollution in the most cost-effective manner.

Sincerely,

American Plastics Council
1275 K Street, N.W., Suite 400
Washington, DC 20005

American Portland Cement Alliance
1212 New York Avenue, N.W., Suite 500
Washington, DC 20005–3987

National Association of Home Builders
1201 15th Street, N.W.
Washington, DC 20005–2800

NPES The Association for the Suppliers of Printing and Publishing
1899 Preston White Drive
Reston, Virginia 22091–4367

National Paint and Coatings Association
1500 Rhode Island Avenue, N.W.
Washington, DC 20005–5897

The Society of the Plastics Industry
1275 K Street, N.W., Suite 400
Washington, DC 20005

cc: Hon. John Chafee; Hon. Robert Dole; Hon. Joseph Lieberman; Hon. Newt Gingrich; Hon. Thomas Bliley, Jr.; Hon. Joe Barton; Hon. Max Baucus; Hon. Thomas Daschle; Hon. Lauch Faircloth; Hon. Richard Gephardt; Hon. John Dingell; Hon. Henry Waxman

Mr. WYDEN. Finally, Mr. Chairman, I would say that the before the committee decides inspection and maintenance isn't the answer, there needs to be careful consideration of what alternatives will replace it. The best way to do that is to have a complete and balanced hearing record.

We look forward to working cooperatively with you, Mr. Chairman, to accomplish that in all future hearings.

Mr. BARTON. I thank the gentleman and appreciate his opening statement, especially that he's willing to bend over backwards to ease the growing pains of the new majority. I do appreciate that.

I'd like to recognize the distinguished chairman of the full committee for any opening statement that he may wish to make. Mr. Bliley.

Chairman BLILEY. Thank you, Mr. Chairman. I want to join in congratulating you for holding the hearings today and tomorrow on EPA's efforts to implement the inspection and maintenance provisions of the Clean Air Act Amendments of 1990.

As the chairman has already noted, these hearings are part of a series of hearings on EPA's implementation and enforcement of the 1990 Clean Air Act Amendments. We have already had two hearings, one of them last week on the issue of employee trip reduction, and we will have a number of additional hearings in the future on issues of concern to the members of the committee and to the public at-large.

I would like to say just a word about the purpose of these hearings. It has been more than 4 years since the 1990 amendments were adopted. In those 4 years, EPA has issued a large number of regulations on a broad array of issues. It is time now for some serious oversight. The purpose of our hearings is to find out where the Clean Air Act is working and where it isn't. Where it's not working, we want to know if EPA can fix it and, where EPA can't fix it, we want to know what else needs to be done.

For my own part, I'm keeping an open mind on possible solutions to problems with the Clean Air Act, because we really have just begun our oversight activities. But I understand the views of those who are beginning to say more frequently and more insistently that the Clean Air Act is not working very effectively.

In fact, my own Governor is among those who have concluded that the Clean Air Act is not working in some important respects. In testimony presented before this subcommittee a little more than a month ago, Governor Allen stated, "Virginia and a growing number of States across the country believe that the Clean Air Act is way off course. Federal bureaucrats administering the Clean Air Act, primarily the Environmental Protection Agency, are flat wrong in their mandates of one-size-fits-all prescriptions for clean air that ignores sound science and common sense."

One of the issues of greatest concern to the Governor of Virginia is the very issue before this subcommittee today—EPA's implementation of an enhanced inspection and maintenance program for northern Virginia. I am pleased that the Governor's representative will testify during tomorrow's hearing. A concern which the Governor has, and which I share, is that EPA is not using its authority to implement the I/M program in a way that maximizes benefits to the environment, while minimizing cost and inconvenience to consumers.

And what makes this situation even more frustrating is that EPA apparently isn't even trying to implement the I/M program in a way that makes sense. What we hear from the EPA is "my way or the highway." And what they mean by that is threatened loss of Federal highway funds if States refuse to kowtow to EPA's demands.

As we review the record to these hearings, I will be looking for indications that EPA is willing to be flexible on implementing this portion of the law, that EPA understands the concerns of consum-

ers and motorists, and that EPA is willing to let States try a new or a better way, such as remote sensing. Without this kind of show of flexibility, I am concerned that Congress will be forced to become more involved in the implementation and administration of the inspection and maintenance program.

I want to welcome our witnesses this morning and say that I look forward to reviewing that testimony. Thank you, Mr. Chairman.

Mr. BARTON. Thank you, Mr. Bliley. We'd now like to recognize the distinguished gentleman from California, Mr. Waxman, for an opening statement.

Mr. WAXMAN. Thank you very much, Mr. Chairman. In 1990, when we adopted the Clean Air Act, we inserted a provision, at the chairman's request, requiring the use of remote sensing to assess motor vehicle emissions in seriously polluted areas. As I reflect on this matter and even at the time, I thought it really wasn't a wise thing for us to do. As a policy matter, we should have just directed the Agency to set tough performance standards for inspection and maintenance and allowed cities to decide whether they wanted to use this technology or not.

In fact, over and over again, I hear from my Republican colleagues that we shouldn't micromanage the way that we achieve the environmental objectives. We should just set the standards. But because of the importance of my colleague from Texas and the support he had from a number of his colleagues on the other side of the aisle, we did put that provision into the legislation.

Today we see that there is a further concern on the part of our chairman about this remote sensing strategy. This is a hearing today, 1 of 2 days of hearing on the effectiveness of remote sensing. But what I'm concerned about is not whether or not we should hold this hearing, I think it's wise that we do evaluate whether the inspection and maintenance program is working, whether the remote sensing strategy is an effective one or not. What I'm concerned about is that a Congressional hearing should be balanced. They're supposed to be fair. They're supposed to represent both sides, if there are two, and maybe even more sides of an issue if there are more.

But today's hearing is none of these things. The witnesses we'll hear from today will give us only one side of the story. The majority, I must have to say this reluctantly, has deliberately refused to allow testimony that would be damaging to the case or critical of the use of remote sensing. I have written the chairman a letter, which I will attach and put into the record as part of my opening statement, arguing our concerns. The minority asked to have five witnesses testify today. Four of them were rejected. The only witness who was allowed to testify comes from industry and, not surprisingly, is largely opposed to the current I/M requirements.

Let me tell you what we would have heard if we were to have a fair hearing. On the first panel, it's this technology is said to work like magic. If it's true, it's wonderful, but we ought to have a more thorough examination of this issue. By taking infrared measurements of passing cars, it's supposed to tell us how dirty the vehicle is. Remote sensing is supposed to eliminate the need for consumers to take their cars in for inspections.

Oh, how we all wish this would work. We would rather have something that is less intrusive on people in order to accomplish the environmental goals. But the question is, does it work. California just completed the most comprehensive evaluation of remote sensing ever. This evaluation showed that the technology missed 90 percent of the polluting cars. The evaluation also showed that over half the cars that were caught by remote sensing were clean. They had no emission problems.

I say that because, as I understand it, we have a study commissioned by the State of California which we should hear about, we should be able to evaluate. One of the witnesses we requested was Tom Austin, who could tell us about this new California data, from whom we could question whether this data is accurate or not, so we could compare it with the witnesses who will tell us that remote sensing is so effective.

Mr. Austin is one of the two experts in motor vehicle emissions. He used to be the Executive Officer of the California Air Resources Board. For the last 14 years, he has run a consulting company, Sierra Research, that specializes in motor vehicle emissions. He is a consultant for the State of California, U.S. EPA, and the Congressional Office of Technology Assessment, as well as the auto and oil industries. His company has reviewed the new California data in detail.

But the majority has refused to allow Mr. Austin to testify. And I have today a copy of his testimony which he would have presented to us if he were given the opportunity. It's a very powerful indictment of remote sensing and I will make it available to any member of the public or of this committee that wants to hear more balanced views.

I would also point out that Mr. Austin is even here today and if the members of the committee still wanted to hear from him today or tomorrow, I think it would still be appropriate to get his point of view on the record.

On our third panel, the minority requested that the environmental group, the Natural Resources Defense Council, and the health organization, the American Lung Association, be permitted to testify. The NRDC was simply turned down flat. The American Lung Association was initially accepted, but when the Lung Association said they wanted Mike Walsh, a true motor vehicle expert who had been advising them for over a decade, to testify, the majority said that Mr. Walsh could not testify.

Yesterday, the Lung Association wrote a letter protesting this unprecedented action and I'd like to read a section of what the Lung Association wrote: "Mr. Chairman, in the more than 15 years the American Lung Association has testified before Congressional committees, we have never been approached to testify and have the offer withdrawn because of the witness we selected to represent our association. If the goal of your committee is to provide oversight of the implementation of the Clean Air Act, we question your suppression of an expert witness and the American Lung Association. Your action is unprecedented and we strongly protest your decision."

I would also attach to my statement the full text of the Lung Association letter. Mr. Chairman, I know there are growing pains as new personnel take over the positions of chairmen of committees

and subcommittees in the new Republican-controlled Congress. But let me say I was Chairman of the Health and Environment Subcommittee for 16 years. We never ever turned down a request for a witness by any member of the committee and certainly by no member of the minority party. And I just think that when members of this subcommittee request testimony by witnesses who have expertise, who can give us a differing point of view, they shouldn't be rejected from even being able to testify, to give us their point of view, and to be subjected to cross examination or questioning by members who may not agree with them, simply because their views may not reflect the wishes of the chairman or the majority party.

I yield back the balance of my time.

[The letters referred to follow:]

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
March 22, 1995.

HON. JOE BARTON,
Chairman, Subcommittee on Oversight and Investigations, 2264 Rayburn House Office Building,
Washington, DC 20515

DEAR MR. CHAIRMAN: I am extremely dismayed to learn that you have refused many minority requests for witnesses for this week's hearings on automotive inspection and maintenance.

A hearing should provide an opportunity for members to hear all sides of controversial issues. For this reason, when I was chairman of the Health and the Environment Subcommittee and the Subcommittee held hearings on clean air, I accommodated all requests by the minority for witnesses. Indeed, in my 16 years as Subcommittee chairman, I cannot recall a single instance in which I declined a Subcommittee member's suggestion for a witness.

Unfortunately, you have not followed this practice. To the contrary, you rejected minority suggestions that the Subcommittee hear testimony from Tom Austin, an expert on motor vehicle emissions from Sierra Research, Inc., (and former Executive Officer of the California Air Resources Board); Mike Walsh, an independent technical consultant on motor vehicle emissions (and former Deputy Assistant Administrator, Mobile Source Air Pollution Control, U.S. Environmental Protection Agency); and the Natural Defense Council.

Further, I understand that although you have invited representatives from four states sympathetic to your views to testify, you initially invited a representative of only one of the four states suggested by the minority. Only when that representative could not attend did you invite a representative from one of the other states suggested by the minority.

I have been further informed that when the American Lung Association informed your staff that it would send Mike Walsh to testify on behalf of the organization, your staff said that this would not be acceptable. The American Lung Association complained to me about this incident and stated that never before had congressional staff attempted to dictate who the organization's witness could be. The American Lung Association has told me that it will refuse to testify under these circumstances.

In total, I understand that only two of the nine witnesses suggested by the minority will be testifying at the hearings. In contrast, 15 witnesses that you selected will be testifying. This 15 to 2 ratio is patently unfair.

I am especially troubled by the exclusion of the two expert witnesses suggested by the minority, Tom Austin and Mike Walsh.

You have long been an enthusiastic supporter of using remote sensing devices (RSDs) as an alternative to traditional motor vehicle inspections. These devices use infrared radiation to monitor emissions from moving motor vehicles. In fact, you wrote the amendment to the 1990 clean air law which mandated that RSDs be included in enhanced inspection and maintenance programs. Several of the witnesses at the hearing share your views and will testify in favor of increased use of RSDs. Indeed, you invited the scientist who invented the RSD technology, Donald Stedman, to be the hearing's lead-off witness.

To provide balance on this issue, the minority suggested that Tom Austin be allowed to testify. Mr. Austin has just completed a review of the California "Pilot

[illegible]

[illegible] and Investigations

HENRY A. WAXMAN

[illegible]

AMERICAN LUNG ASSOCIATION
March 22, 1995.

[illegible]
Chairman, Subcommittee on Oversight and Investigations, Commerce Committee,
U.S. House of Representatives,
Washington, DC 20515.

DEAR CHAIRMAN BARTON: Yesterday, your staff approached the American Lung Association to testify at the Clean Air Act Oversight hearing on Thursday, March [illegible]. We are very disappointed that the condition placed on our appearance was that our expert on Inspection and Maintenance, Michael P. Walsh could not appear on our behalf.

Mr. Chairman, in the more than 15 years the American Lung Association has testified before Congressional Committees, we have never been approached to testify and had the offer withdrawn because of the witness we selected to represent our [illegible]. In the past, Chairmen have requested a specific witness and we have [illegible] the request. However, your action is unprecedented and we strongly protest [illegible].

The American Lung Association has long been active in mobile source pollution [illegible]. We have participated in state implementation of inspection programs [illegible] represent the unique perspective of public health and mobile source

expertise. Mr. Walsh has advised the American Lung Association on these matters for over a decade. He currently serves as a member of our Outdoor Air Pollution Expert Advisory Group and the American Lung Association of Northern Virginia's Air Quality Committee. Mr. Walsh is an internationally respected expert on mobile source air pollution. He understands vehicle emissions, emissions testing, emission modeling and the other issues concerning motor vehicles impact on air pollution.

The Clean Air Act oversight process is critical to the success of the law. The American Lung Association expects Congress to hold EPA accountable for the pace and design of the implementation of the law. To achieve the committee's goal of understanding the decisions that EPA has made and their rationale, the Committee needs to hear from a range of experts in the field.

Mr. Chairman, if the goal of your committee is to provide oversight of the implementation of the Clean Air Act, we question your suppression of an expert witness and the American Lung Association. Committee staff indicated your rationale for censoring Mr. Walsh was his past employment at the U.S. Environmental Protection Agency. (Mr. Walsh left EPA in 1981, after serving as director of the mobile source pollution control effort.) I must make it very clear, Mr. Chairman, any witness appearing on behalf of the American Lung Association is representing solely our views and concerns. We believe Mr. Walsh's past experience at EPA enhances his professional expertise. The American Lung Association's position on I/M is clear. Our views differ from EPA on many issues with respect to Inspection and Maintenance.

Mr. Chairman, the American Lung Association would welcome the opportunity to testify before your committee, however, we do not believe it wise to dictate who cannot speak for our organization.

We had hoped the rhetoric about a new way of doing business for the 104th Congress would mean greater openness. It appears, the tactics of the new leadership are however, more limiting and closed than they ever were in the past.

Sincerely,

FRAN DU MELLE, *Deputy Managing Director.*

cc: Hon. Tom Bliley, Chairman, Commerce Committee
Hon. John Dingell, Ranking Member Commerce Committee
Hon. Ron Wyden, Ranking Member, Oversight and Investigations
Subcommittee: Hon. Christopher Cox; Hon. Gary Franks; Hon. Jim Greenwood; Hon. Michael Crapo; Hon. Richard Burr; Hon. Daniel Frisa; Hon. Henry Waxman; Hon. Elizabeth Furse; Hon. Anna Eshoo; Hon. Ron Klink

Mr. BARTON. Well, I thank the gentleman for that opening statement. It's not the intent of the Chair to get into an argument with the distinguished member of the subcommittee, but I want to point out a couple of things. Number one, other than the ranking member, the opening statements are supposed to be 3 minutes. I let the gentleman speak for approximately 10 minutes for his opening statement.

Number two, I've been in the minority for 10 years. In the 10 years that I was in the minority, I was never asked nor allowed to present any witness to any hearing. Never. Now, admittedly, I was not a member of your subcommittee. So it's quite possible that you operated your subcommittee much more openly and——

Chairman BLILEY. Would the chairman yield?

Mr. BARTON. Be happy to yield to the committee chairman.

Chairman BLILEY. I was a member of that subcommittee and I remember on one occasion when we had one of the chairman's frequent tobacco hearings and I asked for certain witnesses and I was shut down. And it so outraged me, that we happened to be under the 5-minute rule and I shut his hearing down. So, I mean, don't tell me that we had every witness that we wanted. It just isn't so.

Mr. BARTON. But having said that, I think the gentleman——

Mr. WAXMAN. Well, I want to make a point of personal privilege to speak after the chairman is finished.

Mr. BARTON. Well, I'd be happy to yield. I'm not running a railroad here. So the gentleman is recognized.

Mr. WAXMAN. I beg to differ with the gentleman from Virginia. If we had a request for the witnesses to say the same thing over and over again to express the same point of view, at times we would limit it. But I have sat through innumerable hearings of witnesses that you have requested and the minority members have requested and I don't recall ever turning down anybody to give a point of view because we did not want that point of view expressed.

And what I see here today is that people have been rejected from being able to testify not because we have duplication of testimony, but because they want to give a point of view that the chairman finds troublesome.

I find that an improper way for us to be conducting a hearing. We ought to get views, whether we agree with them or not, expressed and then be able to make our decision. But if we're going to only have one side, it seems to me that that's not a fair way to proceed.

Chairman BLILEY. Would the chairman yield again?

Mr. BARTON. Be happy to.

Chairman BLILEY. The gentleman from California, in his opening statement, said point blank, unless my hearing is faulty and I had it tested yesterday and the doctor said it was fine, that he never turned down a witness from the minority in his 16 years as chairman of the committee. And I just find that statement to be not true.

Mr. WAXMAN. Well, I will be glad to look further as to where you think I ever turned you down, but I must say, categorically, I don't recall ever turning down a request for a witness from you or any member of the minority party. And I say that categorically and if I'm wrong I'm wrong and I'd like to know very specifically the instance where you think I am mistaken. But I certainly can give you many instances where we did try to accommodate your requests.

Mr. BARTON. Well, I'm going to——

Chairman BLILEY. I'm sure you did and I will get you the information.

Mr. BARTON. Prerogative of the Chair, for both of these distinguished members. And suffice it to say that we're not trying to run an unfair, unbalanced hearing. Some of the witnesses that were presented have testified numerous times and are former employees of the EPA, and those views are going to be presented in this hearing.

So having said that, we'd now——

Mr. WAXMAN. Point of personal privilege further. Because the gentleman from Virginia has questioned the voracity of whether I ever turned him down, I'd like to be specific on the record in this hearing of where I ever turned down a tobacco witness, because my staff informs me we never, ever turned down a request from a tobacco industry witness. In fact, we sat through many, many hearings where we heard from them all.

So I would like to have that in this record and hear specifically where you feel we ever turned you down.

Chairman BLILEY. I will see that you get the information.

Mr. WYDEN. Would the chairman just yield very briefly?

Mr. BARTON. I yield to the ranking member from Oregon, briefly.

Mr. WYDEN. I appreciate that. I am reluctant to pass up any opportunity to talk on the tobacco issue, as the gentleman from Virginia and the gentleman from California know. I would like to make only two points here.

One, it is the desire of the minority simply to be able to find the facts respective——

Chairman BLILEY. And the majority. We accept that.

Mr. WYDEN. [continuing] to this issue. And, second, I think that the gentleman knows we wish to work in a bipartisan way. We have already done that with respect to the issue involving cement dumping, where we have gone in together on a letter. I want to make it clear to the gentleman that what we wish to do is to uphold the longstanding bipartisan tradition of this subcommittee, which, under Chairman Dingell, with Mr. Bliley as ranking minority member, was the way we operated.

I think we've also shown in matters already, such as the one I mentioned, that we want to work with the gentleman, and our desire here is to make sure that the facts get out in an objective fashion.

I thank him for yielding.

Mr. BARTON. I agree with that. The chairman recognizes Mr. Frisa of New York for an opening statement, and hopefully it will be 3 minutes or less.

Mr. FRISA. Thank you, Mr. Chairman, and I congratulate you for holding this hearing on this important topic of implementation and enforcement of the Clean Air Act. And I think it's an appropriate time, considering the discussion that has just taken place on this panel, that we note that for the first time in a long time in this Congress, we now have some fresh air. So that we can really get to the issues that count and affect this country and its citizens, our real health and our real economy.

So I think with some fresh air, now that, in November, we had the opportunity to clear the air of a lot of the political rhetoric, as was just evidenced by some of the statements from the gentleman from California and some of the groups that do his political posturing for him, I think now we have an opportunity to get real, to employ some sanity and some common sense to this process.

Thank you, Mr. Chairman. I welcome the opportunity to hear from the witnesses before us.

Mr. BARTON. Thank the gentleman from New York. We now recognize the gentlelady from California for an opening statement.

Ms. ESHOO. Thank you, Mr. Chairman. The Clean Air Act oversight process is critical to the success of the law. To shape responsible public policy, we must hear information on a full range of views on the issue. And I want to underscore that phrase, a full range of views. We should not be afraid of that.

Today we will hear a number of distinguished panelists testify. Yet, as policymakers, I think our constituents are being shortchanged. The majority has refused to accept requests for witnesses from the minority.

The American Lung Association was approached by the committee to testify, but their expert witness on inspection and maintenance was rejected by the majority. Over the span of more than 15 years the American Lung Association has testified before Congress,

they have never been approached to testify and then have the offer withdrawn because of the witness they chose.

Another witness who was rejected was Tom Austin, who just completed a review of the pilot project on I/M from my State of California. According to the study, remote sensing devices have a high false failure rate and succeeded in identifying only a fraction of the excess emissions that are identifiable by a good I/M program.

Indeed, Mr. Austin's findings showed an extremely poor correlation between the emissions recorded by remote sensing devices and the actual level of emissions from vehicles monitored by remote sensing devices. His views and the results of the California pilot project are critical to the issues we're discussing today. Yet, a thorough presentation of this information is being kept from us as we meet.

Mr. Chairman, I don't believe that this is a productive process. The health and economic well being of our constituents are at stake. I hope the committee will provide the public with a comprehensive panel of witnesses in the future.

This is an issue that I've been involved in for a long time. I served on the Bay Area Air District Board. In fact, I served as the president of that board. So the implementation of the Clean Air Act and the standards that were set in it are something that I've been involved with for a long time. I don't believe it's political posturing. We should not be afraid of hearing all kinds of views on this and then, as public policymakers, we can question, we can debate and we are the healthier for it.

I'm a fairly new Member of Congress. For those that don't think they've been treated right, most frankly, as a mother, I've always said two wrongs don't make a right. So as we are trying to clean up the air and keep it clean, we should keep our own process clean and tidy, as well.

Thank you.

Mr. BARTON. The Chair thanks the lady for her motherly advice. Now recognize the gentleman from Idaho for an opening statement, if he wishes to make one.

Mr. CRAPO. Thank you, Mr. Chairman. And in the interest of time, I will waive my right to an opening statement.

Mr. BARTON. The Chair would then recognize the gentleman from North Carolina for an opening statement.

Mr. BURR. Mr. Chairman, in an effort to conserve time, I would ask unanimous consent to enter my opening statement into the record, so we can begin to hear some of the testimony.

Mr. BARTON. The chairman would then recognize the distinguished vice chairman for any opening statement that he wishes to make.

Mr. COX. I thank the chairman. I am delighted that you have scheduled this hearing and I would just observe at the outset that just as important as who are the witness at a hearing is what is the subject of the hearing. We've been trying for years to get hearings scheduled on, as Mr. Frisa mentioned, the things that matter. This issue really matters and we've got a great deal of expert testimony today.

The second is I just want to point out, because it was clear to me, as the vice chairman, although I don't think it was clear in the

exchanges among members, that the minority are entitled to two witnesses if they press issue and they get letters and sign up and so on. The rules say that you can get witnesses. Without putting anybody to that trouble, the chairman gave them two witnesses. If there were other witnesses that they wanted to schedule, that was evidently a mistake of not raising the most important people that they thought should be here to testify.

I've been ranking member on committee—subcommittee on Congress for 6 years and I always considered myself lucky when Barbara Boxer or whomever was the chairman gave me an opportunity to get anybody on the panel.

I think the important thing today is we're finally having a hearing on this subject. We've got reams and reams of testimony on the Clean Air Act; it's the law, it's the status quo. And the fact is after so many years, we're finally getting to hear the other side of the story, and that will be leavened with witnesses selected by the minority.

Mr. WYDEN. If the gentleman——

Mr. COX. I'll have to keep my time to stay in the time limit. I don't want to start talking about tobacco again. Some things are very clear to us. Motor vehicles are a significant source of air pollution. A well designed program of automobile inspection and maintenance can be successful in bringing about sizable reductions in overall emissions. In my State of California, it's been estimated that emissions from motor vehicles account for 60 percent of all hydrocarbon emissions, 50 percent of all nitrogen oxide emissions, and 90 percent of carbon monoxide emissions.

Today's hearing will focus on the effectiveness of the inspection and maintenance program in reducing those kinds of emissions from cars. We will be focused especially on the new enhanced version of the I/M test that's required by the 1990 Clean Air Act Amendments.

I am especially pleased that we will be holding 2 days worth of public hearings on this subject. That's because public acceptance is perhaps the most critical element in a successful inspection and maintenance program. This point is underscored nicely in an article that appears in today's Wall Street Journal. To quote briefly from that article, "Tailpipe emissions tests are perhaps the most pervasive environmental ritual in America. Motorists submit to them, for the most part willingly, in the belief that they help improve the quality of urban air. Continued public confidence in and acceptance of the inspection and maintenance program and of motorists' acceptance of the Clean Air Act itself depends upon this belief not being misplaced."

It's for this reason that Members of Congress and officials at EPA should be so concerned about the grass roots revolt that's taking place in States across the Nation over EPA's demand for centralized testing. Motorists in Texas, Pennsylvania, Maine, Colorado and other States in recent months have organized vast protests against centralized I/M testing, which they have found to be unreliable, enormously costly, not to mention inconvenient.

But inconvenienced individuals aren't the only ones who don't like centralized and enhanced I/M testing. An increasing number of scientists and independent public policy experts are questioning

the assumptions underlying EPA's preference for the new I/M program.

I'm looking forward to hearing the testimony of our witnesses on this score. I'm interested in knowing whether we can answer questions about the reliability of the computer models which EPA used to predict the emission reductions resulting from the new enhanced I/M test. There is a growing body of evidence that a small number of cars are, in fact, responsible for a majority of all auto emissions. EPA's preference for centralized program, testing all cars every 2 years, isn't focused on reducing the emissions of these gross polluters.

I would especially like to thank Lynn Scarlett and Joel Schwartz for making the long trip out here from my State of California to share with us their expertise in this area. California's program is designed to meet the Clean Air Act's statutory demand that it be equally effective as a centralized program, but EPA continues to discount its effectiveness by 50 percent. EPA's refusal to give full credit to programs that are decentralized has created great hardship in many States where they were trying to design programs that will at once maintain the confidence of our State's motorists and simultaneously meet the emission reduction goals of the Clean Air Act.

I thank the chairman once again for scheduling this important hearing on a very important topic, and I yield back any remaining time.

Mr. BARTON. Thank the gentleman. I'd like to recognize the ranking member for a brief statement and then the distinguished ranking member of the full committee for any statement he may wish. Mr. Wyden.

Mr. WYDEN. Mr. Chairman, I'll be very brief. The statement from the gentleman from California is simply incorrect with respect to the minority having a chance to get the two witnesses that we most desired. We desired to have Mr. Walsh and the American Lung Association, that was denied, and also Mr. Austin, as we have discussed. I just wanted to make the record clear on that point.

Mr. COX. I only wanted to point out that the minority requested two witnesses and got them.

Mr. BARTON. I don't want to belabor this. I think we've established a good relationship with the majority and the minority. We're trying to notify as soon as we know when a hearing is going to be. We've not put any limit on the number of witnesses that can be suggested. The chairman will stipulate in this case the chairman made a decision to reject specific witnesses. I think that's the chairman's prerogative.

Now, I am not going to run this subcommittee in a sense that there's going to be a percentage deal on each hearing. I don't think that's right. There are going to be some hearings where it could well be that over half the witnesses are recommended by the minority. There may be some hearings when there are a large number of witnesses that are recommended by the minority that are not accepted. That's the reality of the marketplace.

Mr. WYDEN. Would the gentleman yield further?

Mr. BARTON. I would be happy to yield, before I yield to the distinguished——

Mr. WYDEN. Again, very briefly, what we are interested in is getting to the facts. We felt that, for example, Mr. Walsh and Mr. Austin were essential to getting to the facts. So we are not interested in any kind of arbitrary system or any kind of quota system. We wish to work, as we did under Mr. Dingell, when Mr. Bliley was ranking minority member, in a bipartisan fashion, to assess the facts. The fact that Mr. Walsh and Mr. Austin—the witnesses that we most desire—are not here we think it's going to impede the effort to get to the facts and we wish to work with the Chair and all our colleagues in the majority to get that information out.

Mr. WAXMAN. Would the chairman yield to me?

Mr. BARTON. I'd be happy to yield.

Mr. WAXMAN. I appreciate your comments that you want to work together and I also want to work with you, and my experience to this point has been you've always been a fair person. But what I can't understand is you rejected two specific witnesses that we think are relevant. On what basis did you reject them?

Mr. BARTON. I rejected them on the basis that they're both former employees of EPA. We're going to have the Deputy Administrator of EPA tomorrow testify and the gentleman who has been in charge of the mobile source program at EPA until recently. So that their testimony would be, to some extent, somewhat duplicative. And on a secondary basis, in at least one of the two witnesses that you apparently want fairly intensely, it's the chairman's analysis that they have not, to use your terminology, been fair in their past evaluations of this particular technology that I'm interested in, the remote sensing. And, admittedly, that's an analysis on my part and not necessarily a fact.

Mr. WAXMAN. If the chairman would yield. First of all, neither of them has worked for EPA for over a decade. They've been involved in other areas. Particularly, Mr. Austin did an analysis of the remote sensing technique which is the subject of this hearing. So I think——

Mr. BARTON. Well, the subject of the hearing, if the gentleman would yield, is not remote sensing. The subject of these hearings is the entire inspection and maintenance program of EPA. I think remote sensing should be a part of that, but so far has not been.

Mr. WAXMAN. Well, we have a number of panelists to talk about that particular strategy. It just strikes me as improper for a chairman not to allow a witness that you don't think has been fair, which presumes that they didn't agree with you, to be able to testify. I've certainly had witnesses testify that I didn't think were particularly worthy or knew what they were talking about. A lot of those tobacco industry representatives came in and just said outrageous things and I certainly didn't think they were honorable or honest in their point of view.

But, nevertheless, they were always allowed to come in and say what they had to say, and that's only one instance of one industry. But I just don't think the chairman ought to be able to make such a subjective judgment as to whether a witness is going to be fair or not. Let's put people up here and let them say what they have to say and then question them to show how unfair they are, if you believe that to be the case.

Mr. BARTON. Well, I respect the gentleman's opinion on that. Would the distinguished full committee ranking member wish to make an opening statement?

Mr. DINGELL. Thank you, Mr. Chairman. I would ask unanimous consent that my opening statement be inserted in the record and I have just a few brief comments.

Mr. BARTON. Without objection.

[The prepared statement of Hon. John D. Dingell follows:]

STATEMENT OF HON. JOHN D. DINGELL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

I commend the Chairman for continuing this Subcommittee's oversight of EPA's implementation of the inspection and maintenance provisions of the Clean Air Act. Effective inspection and maintenance of motor vehicles is a cornerstone of this nation's efforts to reduce air pollution. It also happens to be the most cost-effective way of reducing emissions. So the time that this Subcommittee devotes to this topic is time well spent.

Previous Subcommittee hearings have raised serious questions about EPA's efforts to implement inspection and maintenance programs. In particular, the lack of flexibility exhibited by Ms. Browner's unfortunate predecessor threatened to undermine support for rigorous inspection and maintenance. But it should also be noted that several states, including Michigan, voluntarily, and perhaps unwisely, opted in to enhanced inspection and maintenance. I am heartened that EPA now understands the flexibility inherent in the statutory provisions and, as Ms. Browner testified last month, is working with the states to develop workable and acceptable plans.

EPA's efforts are taking place against a background of increasing study and new data concerning the effectiveness of different alternatives for finding and fixing polluting vehicles. I would like to see remote sensing become a useful and significant tool for cleaning up the air, and look forward to learning more on the topic. The first two panels today appear to have some useful information to give us, but it is most unfortunate that they will provide essentially one side of the debate. It would have been more helpful, and more in keeping with past Subcommittee practice, to have balanced panels, particularly on matters of scientific dispute. I personally would have enjoyed hearing a true debate between Mr. Stedman and Mr. Austin as to what the data show and whether it is good news or bad news.

Because so much of the inspection and maintenance issue revolves around technology, including the comparative performance of different testing, I suggest that the Chairman and Ranking Member ask the Office of Technology Assessment, which is well suited to this kind of work, for an independent analysis of those methods, including the promising technology of remote sensing. This, in conjunction with the GAO work already requested by the Chairman, should help us cut through the scientific fog that surrounds the implementation issues.

Mr. DINGELL. Mr. Chairman, first of all, I commend you for continuing your oversight of EPA. As you very well know, Mr. Chairman, I have not been at many times a great champion of EPA. It's been my view that they have been slovenly in administration, slovenly in the handling of facts, slovenly in the scientific research, slovenly in their rulemaking, and have generally, under both administrations, this and the previous administrations, been very much wanting in terms of both competence, fairness and other things.

And so I think a look at the way the Agency is carrying out its functions, particularly with regard to matters important as the Clean Air Act is, is a very good thing to be done and I commend you for it, Mr. Chairman. I think that these hearings have potential to be useful.

Having said those things, Mr. Chairman, I would say, first, that I have great respect and great affection for you. It is my view that it is your purpose to be fair and to run this subcommittee well. I

would observe to you, Mr. Chairman, that it was the tradition of this subcommittee to hear all witnesses and that it has been generally the practices of the House to hear every witness who had a story to tell and to listen to the minority when they asked to be heard.

It was my practice to permit the minority to have witnesses or suggest witnesses during the time that I was either chairman of the full committee or chairman of the subcommittee. I believe that's very important in achieving both a good record, getting the facts, which is very important, but, also, Mr. Chairman, it was very important in not only having confidence in the members of the committee, the confidence of the public, and the confidence in the proceedings of the committee and the record of the committee.

And I, regretfully, this morning, Mr. Chairman, do not find that to be the case here this morning. I hope that the defects, which Mr. Waxman and other members of the committee have observed, would be respected and that the steps would be made to see to it that this committee functions in a fair and more bipartisan fashion, in a way which hears from all witnesses.

I'm not going to tell you that every witness who appears before this committee has a useful story to tell and I'm not going to tell you that all of them are honest or competent. Matter of fact, we have many scoundrels who appear here before us and we have many people who are of most limited competence and we have a fair number who have a very much distorted story to tell the committee. It's always been the practice and the province of the committee to sort through these things and try to arrive at the facts on the basis of an evaluation of the testimony that was given.

I don't think that that is being done this morning, Mr. Chairman, and I hope that as you go forward, you will review this matter. It is possible that the minority will be requesting the opportunity to have witnesses before the subcommittee to complete the record. I would hope that that would not be necessary and that we could deal with this matter in perhaps a fashion more consistent with the comity that we've practiced over the years.

Thank you, Mr. Chairman.

Mr. BARTON. Thank the distinguished gentleman from Michigan. Would Mr. Greenwood like to make an opening statement? We also have Mr. Longley, not a member of the committee, who wished to just observe the hearing and we're delighted to have him here.

We'll now hear our first panel. Before we do that, though, we need to take about a 1-minute break to hook up our timing device.

I would now like to welcome Dr. Donald Stedman, of the Chemistry Department of the University of Denver; Professor David Kittelson and Mr. Huel Scherrer, from the Department of Mechanical Engineering, University of Minnesota.

You are aware that this subcommittee is an investigative subcommittee and, as such, it has had the practice of taking testimony under oath. Do any of you have any objection to testifying under oath?

[Chorus of no's.]

Mr. BARTON. The Chair then advises each of you that under the rules of the House and the rules of the committee, you are entitled

to be advised by counsel. Do any of you desire to be advised by counsel during your testimony this morning?

[Chorus of no's.]

Mr. BARTON. In that case, would you please rise and raise your right hand?

[Witnesses sworn.]

Mr. BARTON. Be seated. Each of you is now under oath. I will allow each of you to give a 5-minute opening statement. When the little red light goes on, it means that your 5 minutes is up. We will start with Dr. Stedman.

TESTIMONY OF DONALD H. STEDMAN, CHEMISTRY DEPARTMENT, UNIVERSITY OF DENVER; AND HUEL C. SCHERRER, AND DAVID B. KITTELSON, DEPARTMENT OF MECHANICAL ENGINEERING, UNIVERSITY OF MINNESOTA

Mr. STEDMAN. Thank you very much, Mr. Barton. Thank you, committee, for this opportunity to present some of our work. I am Donald Stedman, from the Chemistry Department of the University of Denver. I am the co-inventor of the on-road emissions remote sensor, which is illustrated in my testimony. There are 75 copies here, if people are interested.

It has measured over 3 million vehicles in 20 countries. We have published 16 anonymously peer reviewed papers on vehicle emissions and many reports. I appear here as a private citizen.

The most important results of our studies, which have been confirmed by EPA and the California Air Resources Board dynamometer data, are twofold, two important results. Half the cars produce less than 10 percent of the emissions from their tailpipe on the road. That's the good news. There's a lot of low emitting cars out there.

The bad news is that half the emissions come from less than 10 percent of the cars. That distinction is so important that I'm going to put those cars up in front of you to keep this in mind. The little foam blocks here are the emissions of the clean cars, and the emissions is the height of the foam block. That's the cleanest seven cars that you will find in the Nation.

The eighth car looks like that. The ninth car has these emissions. Unfortunately, the tenth car has those emissions. This is the situation you're dealing with with real world on-road emissions. And I'm happy to say that I agree with the EPA on one very important point. If we don't do a good inspection and maintenance program, no other program will do any good at all. You've got to do the I/M right. All the other programs will fail unless I/M is done correctly.

The EPA's claims for I/M effectiveness are based on a fundamentally flawed computer model which has been wrong on inspection and maintenance before. You would seek another opinion before you trusted my word alone on the chemistry capability of my chemistry students. For the same reason, you should not trust the current or previous office of the U.S. EPA, Office of Mobil Sources, when they tell you how well their I/M program will work. OMS writes the rules, enforces the rules, evaluates by means of a computer model how well the rules are doing. They also pay between a third and a half of the salaries of the State agencies which have

to enforce EPA's rules. Not surprisingly, this sort of suppresses insubordination.

The flaws in the computer model include the assumption that all the failed cars are properly repaired and the repairs last essentially forever. And another flaw, there are many, assumes that all 1986 vehicles drive the same number of miles each year and have the same odometer reading on the first of January. This is clearly not a good assumption when it comes to I/M. It may be a good assumption for overall averages.

Much of my testimony, because of the 5-minute limitation, I will skip. It's all printed. I want to talk about the best way to evaluate an I/M program. That is to look at its effect on on-road emissions. What the remote sensor can do for you, even if it has nothing to do with your I/M program, it can measure the on-road emissions of passing cars.

The advantages of an on-road testing program is that it can be imposed gradually and it can evaluate its own effectiveness. The Sacramento study showed that a single remote sensor can measure a million cars a year. The program that is now going on in Colorado shows that a single EPA treadmill can measure about 10,000 cars a year. That means that the remote sensor can get you about 100 times as much data for almost the same cost. The price is the same, the number of personnel are the same.

On-road remote sensing has found that the effectiveness of I/M is either less than EPA models predict or non-existent. When we've looked in Tucson, Arizona or Chicago, Illinois, we found no detectable difference between the emissions of I/M cars and cars that are in counties that are not an I/M. Those are centralized I/M locations.

In Colorado and El Paso, Texas, we have found a detectable difference in 2 out of 5 cases, and in both cases those are decentralized emission testing programs. So we have seen a difference with remote sensing. We know from remote sensing studies that I/M is essential. We believe that the major problem with I/M is that it sends the wrong message to people. A program which rewards the owner with a sticker for passing a test 1 day every 2 years and penalizes him or her $450 or more if she or she fails the test sends a very strong message to arrange to pass the test; whatever it takes to do so, as cheaply as possible.

I recommend to you an article by Charles Lave entitled "Clean for a Day" on that subject. Since my light has gone off, I'll read just the summary. That is not to suggest that you do remote sensing, but that either a set of different I/M programs should be independently evaluated in different locations—and I mean independent, not evaluated by the Agency that does it—or you should get an academy panel together, who are independent of me and of EPA, convened with the responsibility to do review and be asked not to do sanctions.

Thank you.

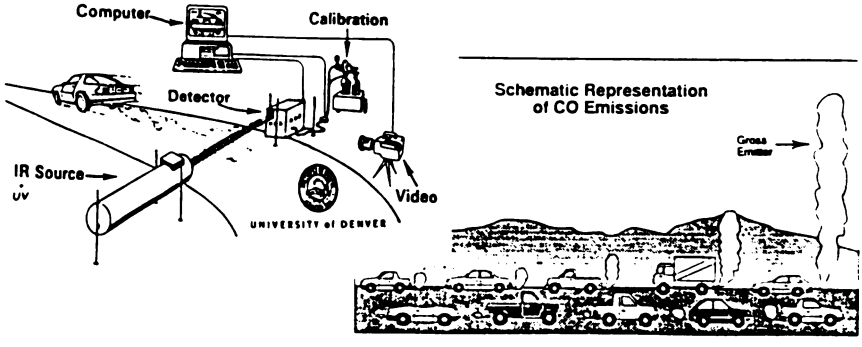
[The prepared statement of Donald H. Stedman follows:]

STATEMENT OF D.H. STEDMAN, CHEMISTRY DEPARTMENT, UNIVERSITY OF DENVER

I am Donald H. Stedman of the Chem. Dept., University of Denver, co-inventor of the on-road emissions remote sensor illustrated above. It has measured over 3,000,000 vehicles in twenty countries. We have published sixteen anonymously peer-reviewed papers on vehicle emissions and many reports. I appear as a private

citizen. The most important results of our studies, confirmed by EPA and CARB dynamometer data are twofold. Half the cars produce less than ten percent of the emissions. This is the good news. The bad news is that half the emissions come from less than ten percent of the cars. These gross polluters are often tampered with and are not always old, although vehicles less than one year old are rarely gross polluters.

CO, HC and NO Remote Sensing



EPA claims for I/M effectiveness are based on a fundamentally flawed computer model which has been wrong on I/M before

You would seek other opinions before you trusted my word on the chemistry capability of my own students. For the same reason you should not trust current or previous officers of the USEPA Office of Mobile Sources (OMS) when they tell you how well their I/M program will work. OMS writes the rules, enforces the rules and evaluates by means of a computer model how well the rules are doing. The USEPA also pays between one third and one half of the salaries at state agencies which have to enforce EPA rules.

Computer model flaws include the assumption that all failed cars are properly repaired and the repairs last essentially forever (Harrington and McConnell, 1993). Another flaw assumes all 1986 vehicles have the same odometer reading and drive the same number of miles each year.

On-road remote sensing has found that the effectiveness of I/M is either less than EPA models predict or non-existent.

Average on-road emissions must be reduced if an I/M program is to work. If a program reduces emissions for one test, one day every year or two, it will fail. In Tucson, Arizona and Chicago, Illinois, on-road data show no detectable differences between the tailpipe emissions of vehicles registered in I/M and non-I/M regions. Both regions have centralized testing. In El Paso, Texas and in Colorado, emissions were significantly different between I/M and non-I/M cars in three out of five cases. In each case, however, the differences were less than the EPA model and might have been caused by other factors than I/M. Both had decentralized programs at the time of the measurements.

No independent testing of the effectiveness of an "enhanced" I/M program has ever been carried out. (No industry which wants to stay in business imposes a new program company-wide until it has been proven in full in a pilot program.)

OMS has tested over 10,000 cars using I/M 240 (EPA OMS, 1995) but has never carried out a pilot program in which an I/M program was based on IM 240. Congress should delay all attempts to impose such programs nationwide until an independent analysis of the success (or failure) has been carried out (Rand Report 1994, Lawson, 1994). Human behavior factors dominate in I/M effectiveness. If manufacturers or motorists or mechanics get the wrong incentives the program will go the way of all our previous attempts.

The best way to evaluate an I/M program is to look at its effect on on-road emissions.

Such an evaluation should be carried out independently of the agency operating or the agency mandating the program.

It is possible that on-road testing is the best way to operate the program. It would be the least expensive, most convenient and might be able to overcome the human factors leading to the "Clean for a Day" syndrome.

As stated in the RAND report (1994), no one knows the potential benefits of any enhanced I/M program, remote sensing, I/M 240 or ASM. For this reason many authors suggest that several different programs should be tested, and the best combination of programs determined by means of real-world data, rather than imposed by a flawed computer model. A program which rewards the owner with a sticker for passing a test one day every 2 years, and penalizes him/her $450 or more if he/she fails sends a very strong message to arrange to pass the test, whatever it takes to do so, as cheaply as possible. (Lave, 1993)

Advantages of an on-road testing program are that it can be imposed gradually, and can evaluate its own effectiveness.

A single remoter sensor can measure one million cars per year (Amlin, 1995).

BILLBOARD: I have suggested that the first remote sensor which a state obtains should be without a video camera but should be connected to a variable message sign (billboard) which tells passing drivers their emissions. This will be a public service, will cause some voluntary repair if the benefits of fuel economy improvement are publicized, and allows the driver to check how well his/her mechanic has carried out the repairs.

TAMPER INSPECTION: The second remote sensor should be used as probable cause for an on-the-spot pullover and underhood inspection for tampered or disconnected emissions control equipment. Even when the inspection was voluntary, a pullover study in California (CARB 1994) found over half the vehicles out of compliance. These vehicles caused 30 percent of the on-road emissions. Many locations nationwide could meet their Clean Air Act goals merely by means of a well enforced tamper elimination program.

EVALUATION: Average on-road emissions are measured by the program as it is carried out. If enough emissions reductions are seen to meet program goals then more draconian action is not necessary. This approach uses on-road data instead of computer modelling for the evaluation. If insufficient reductions are observed, then notification of the owners of gross polluters can be used to send those vehicles to a more comprehensive test.

Various imaginative programs have been suggested which make only the polluter pay in cost or inconvenience. An on-road emission test can be performed for less than $0.50 (and cannot be cheated upon).

When remote sensors are in large vans with logos on the side, drivers can avoid them. When they are placed inside orange road barrels avoidance would be hard. It is now possible to measure remotely the HC and NO and the speed, acceleration and engine temperature of a passing vehicle. Allowing a repeatedly low emitting on-road car to skip its next test has been suggested, as well as the idea of a gate which opens to allow only clean cars on a freeway lane a "Clean Cars Only" lane instead of an HOV lane.

Tomorrow the EPA will tell you that the Sacramento study showed remote sensing had too high an error rate and did not find enough excess emissions when compared to I/M 240. Ask them how many I/M 240 tests it takes to find 10 percent of the excess emissions and what the cost, time and inconvenience to take those tests is. Ask then what cost, time and inconvenience it would take to identify the same emissions using the same I/M 240 test but with remote sensing sending only failed cars to the test. You will find the cost and the inconvenience both about ten times less. But remember that remote sensing is a new tool which can measure the parameter which you are trying to control, namely everyday on-road emissions, not scheduled I/M 240 emissions. In Sacramento when remote sensors failed vehicles and the government asked the owners to come in later for a test, half the owners refused (even though they were told that refusal was against the law) and half of those that did come in passed. When the I/M 240 test was carried out right at the roadside by the USEPA Research Division (Knapp, 1992) all the vehicles failed by remote sensing failed the I/M 240 test. The details of program operation affect the outcome because human factors dominate.

Scheduled emission testing for gross polluters is as effective as scheduled breathalizer testing for drunk drivers.

Scheduled emission testing began in the 1970's. According to C. Swanson (responsible for the data in the original Northrop report upon which scheduled testing was based), the data did not support the benefits of scheduled emission testing but the report was rewritten because "EPA had decided that scheduled emissions testing was a new industry which should be initiated to raise awareness and make everyone feel responsible."

There should be either a set of different I/M programs independently evaluated in different locations, or a National Academy panel should be convened with the responsibility to report back to Congress. All EPA SIP and "conformity" sanction action should be postponed until the results, or the report can be acted upon.

Mr. BARTON. Thank you. Now we'd like to hear from Mr. Scherrer.

TESTIMONY OF HUEL C. SCHERRER

Mr. SCHERRER. The 1991 introduction of an extensive, centralized vehicle inspection/maintenance program in a major metropolitan area affords a unique opportunity to directly measure the effectiveness of such programs. By studying the before and after results of I/M at three congested Minneapolis/St. Paul locations, we found that carbon monoxide levels decreased at virtually the same rate for the first 2 years after inspections began, as they did for the 5 years before inspections. The data show a steady 6 percent per year decrease in carbon monoxide levels since 1987, with no measurable change in that pattern after annual vehicle inspections began in July of 1991 in St. Paul.

We went from a situation where we never tested vehicle emissions to one where we test 1.4 million cars throughout the entire metropolitan area each and every year. This is an extensive, centralized test-only inspection program which began in July 1991. This presents an ideal circumstance to compare the before and after data and directly measure the bottom line effectiveness of an inspection program.

What data did we compare? Our study analyzes hourly ambient carbon monoxide data at three busy intersections. These carbon monoxide monitors are used to determine whether this metropolitan area is an attainment of national ambient air quality standards. Attainment of these standards is determined by the same measurements taken at the same monitoring sites as were analyzed in this study.

The monitoring sites have 5 years of data on inspections plus 2 years of post-inspection data. This is more than 50,000 hourly measurements for each of these monitoring sites. We thoroughly analyze this hourly data, taking into account effects due to wind direction and wind velocity, temperature and traffic levels. What we found is measured carbon monoxide levels decreased continuously at each of these three monitoring sites.

This decrease incurred over the entire 7 year study period, as 1970's and early 1980's model year vehicles are replaced by new cars. Virtually no additional reduction in CO levels was measured following the July 1991 start of the emission inspection program. CO levels decreased at nearly the same rate for the 2 years following the start of emissions testing, as they did for the 5 years prior to emissions testing.

The overall reduction attributable to the inspection program is a 1.3, plus or minus 1.4 percent decrease in measured CO levels. These results are shown on this graph for 1 of the 3 monitored sites. Measured carbon monoxide levels are seen to closely follow this continuously decreasing curve, the solid line, for the 5 years before I/M testing and the 2 years following I/M testing.

As you see, this graph has been extended through the third year of I/M testing with data available since we first published our study.

In summary, this comprehensive, centralized, annual inspection program, started in 1991, has produced virtually no additional reductions in measured carbon monoxide levels. This result is not complex and it is not a model. It is simply a tangible measured result.

I will now ask Professor David Kittelson to further comment on the significance and implications.

TESTIMONY OF DAVID B. KITTELSON

Mr. KITTELSON. Good morning, Mr. Chairman and members of the committee. I am David Kittelson and I'm here as a private citizen. I won't spend any time on the details of our study. You've already heard the main points.

The crux of the work is very simple to understand, because Minnesota had no I/M program prior to initiating an extensive centralized one and there were no significant changes in either traffic patterns or other sources of carbon monoxide near monitoring stations before and after comparisons of CO levels allowed a simple and direct evaluation of the effectiveness of our I/M program.

Three monitoring stations in congested areas of the Twin Cities have been in operation for long enough to allow such comparisons to be made. We evaluated data from these sites for 5 years before and 2 years after the I/M program was implemented. Before the program, CO levels constantly decreased or consistently decreased at a rate of 6 percent a year. After it, CO levels continued to decrease at essentially the same rate.

Atmospheric CO measurements made at the same sites that were used to justify the implementation of the test in the first place showed no impact. These results show that current I/M programs are not performing as predicted by EPA models that are used to make public policy. Minnesota has been forced to implement an EPA mandated program that only works in EPA's computer models, not in the real world.

If we want to maintain public support for programs that claim to reduce air pollution, these programs must do what they claim in the real world, not just in the virtual world of the computer modeler.

We have made great strides in reducing air pollution from vehicles during the last 25 years largely as a result of federally-mandated vehicle emission and fuel economy standards that have led to dramatic improvements in engine technology. These improvements have not been cheap, but Americans have been willing to pay for them because they are getting value for money.

On the other hand, if they are made to pay for mandates that are ineffective, backlash is very likely and good programs will be lost along with bad ones.

Now, let me summarize. We performed our study to clarify the relationship between pollution control policy and results, with emphasis on measured results. Our work shows a continuously downward trend in air pollution in the Twin Cities that can be associated with ever cleaner new cars, not with inspection of existing ones. Programs that do not produce significant improvements in air quality waste scarce resources and erode public support.

Thank you.

[The prepared joint statement and attachment of David B. Kittelson and Huel C. Scherrer follow:]

STATEMENT OF DAVID B. KITTELSON AND HUEL C. SCHERRER, UNIVERSITY OF MINNESOTA

The 1991 introduction of an extensive, centralized vehicle Inspection/Maintenance (I/M) program in a major metropolitan area affords a unique opportunity to directly measure the effectiveness of such programs. By studying the before and after results of I/M at three congested Minneapolis/St. Paul locations, we found that carbon monoxide levels decreased at virtually the same rate for the first two years after inspections began as they did for the five years before inspections. The data show a steady 6 percent per year decrease in carbon monoxide levels since 1987, with no measurable change in that pattern after annual vehicle inspections began in July of 1991. Tailpipe emission standards and improving new car technology gets most of the credit for these continuing emission reductions.

The state of Minnesota instituted the program after U.S. Environmental Protection Agency (EPA) officials had threatened to cut federal transportation finds unless the metro area met national ambient air quality standards. Attainment of these standards is determined by the same measurements, taken at the same monitoring sites, that we analyze in our study. The Minnesota 1.4 program requires 1.4 million car owners within a 30-mile radius of the Twin Cities to have an emissions test performed annually for carbon monoxide and hydrocarbons at centralized, test-only vehicle inspection stations. During the first year of testing, from July 1991 through June 1992, 9.4 percent of the vehicles failed inspection on their initial visit.

Proponents of vehicle testing had predicted it would lead to a 25 to 30 percent reduction in carbon monoxide levels. However, we conclude from direct measurements that only 1.3 percent of the air improvement can be credited to the vehicle inspection system, with a margin for error of plus-or-minus 1.4 percent.

What Minnesota has implemented is a mandated program that works in computer models used by EPA to make public policy—not in the real world. This lack of linkage between EPA's models and real world measurements leads to inappropriate policy decisions and wastes scarce resources. If we want to maintain public support for programs that claim to reduce air pollution, those programs must do what they claim in the real world, not just in the virtual world of the computer modeler.

AUTHORS REPLY TO U.S. EPA'S COMMENTS ON I/M EFFECTIVENESS AS DIRECTLY MEASURED BY AMBIENT CO DATA

(EPA): The study establishes the baseline emission reductions it attributes to new car technology by linearly extrapolating pre-I/M CO reductions indefinitely into the future.

The analysis performed is a logarithmic regression of the time-series atmospheric CO data, and is not a linear extrapolation. This is clearly stated, and discussed at length, in our paper. We examine data over a seven year period, comprising the 5 years before the start of annual I/M inspections plus the 2 years following I/M implementation. The study period is not indefinite, nor does it extend indefinitely into the future.

(EPA): This extrapolation suggests that even without I/M, CO emissions will eventually be reduced to zero, due to new car technology and fleet turnover.

A logarithmic regression does not extrapolate to zero, with or without I/M. Measured atmospheric CO levels are seen to closely follow a logarithmic regression with time, both during the five year baseline period, and for the two years following I/M implementation.

(EPA): In reality, the reduction in CO due to new car technology will level off as vehicle standards stabilize and fleet turnover to these standards is completed.

This assumption incorporates the belief that in-use vehicle emissions are as good (or more recently, as bad) as the regulatory standards that existed at the time the vehicles were built. A considerable body of published scientific data shows in-use vehicle emissions to be continuously improving with each model year—even for vehicles built to the same regulatory standards. Over the seven year period of our study, it is clear that there has been continuing reduction of atmospheric CO levels, and that this trend due to new vehicle technology and fleet turnover is far from stabilized.

(EPA): The authors' claim that their conclusions are based on "real-world data" as compared to EPA's computer projections is disingenuous. A "trend" is just another type of projection based on founded or unfounded assumptions, and data are only "real" to the extent that the formula used is valid and addresses all relevant variables.

Scientific data are direct measurements of physical quantities, and inherently describe the physical world—independent of formulas used or even a knowledge of all relevant variables. On the other hand, computer models are wholly dependent on formulas and a knowledge of all relevant variables. This is why validation of computer models against measured results is so critical in obtaining credible predictions.

The term "real-world data" does not appear anywhere in our paper. The statement in question appears to be from a February 28 Minneapolis Newspaper account of our study. The story reads, in part, "Jackson said the need to establish the [I/M] testing program was 'based on real-world monitoring results' from air quality violations at busy intersections in the mid-to late-1980's and from levels of pollution elsewhere in the Twin Cities that were estimated by Environmental Protection Agency computer models." Ms. Jackson works for the Minnesota Pollution Control Agency, and is not associated with our research in any way. Having said that, we must add that we believe our measurements do, in fact, better reflect what is happening in the so-called "real-world" than do the EPA computer projections.

(EPA): The Minneapolis-St. Paul area has a basic I/M program, but the authors suggest it is an enhanced program by describing it as a "comprehensive I/M program" that "maximize[s] I/M program effectiveness".

The full quotation from our paper is "The 1991 introduction of a comprehensive I/M program in the Minneapolis/St. Paul metropolitan area affords the opportunity to directly measure I/M effectiveness..." We continue by detailing the inspection procedure, and each the elements of this annual, centralized inspection program. The terms "basic" and "enhanced" have no specific meaning in describing the many elements which may comprise an I/M program, so we describe the program as fully as possible. Each of these elements is cited in the referenced 1991 EPA report to maximize I/M program effectiveness.

(EPA): Neither EPA nor the Minnesota Pollution Control Agency has ever predicted I/M emission reductions for specific monitoring sites, nor have they predicted that the Minnesota program would achieve a 25 percent to 30 percent reduction in overall CO inventory.

In a "Fact Sheet" memorandum to the Minnesota Legislature requesting I/M program authorization, the Minnesota Pollution Control Agency (MPCA) stated "The MPCA has concluded that such a [I/M] program is the only area-wide control strategy that can be relied on to reduce CO by the 30 percent required to attain CO standards at all locations."

This memorandum is accompanied by a US EPA letter to the Governor of Minnesota which reads in part "MPCA had an opportunity to review our modeling, and either perform more modeling [on alternatives]—or develop and implement an area wide control strategy such as a vehicle inspection and maintenance program, which would likely be sufficient if appropriately designed."

It is truly disingenuous for EPA to supply and require the use of computer models which predict substantial I/M benefits at the time Legislative Authorization is sought, and then assert that the US EPA itself has never stated these predictions.

(EPA): The authors claim that the program was predicted to "lead to a 25 to 30 percent reduction in carbon monoxide levels," erroneously suggesting that this reduction should be observed at individual monitoring sites.

These direct measurements of atmospheric CO levels are particularly relevant because they are the same data which determine compliance with National Ambient Air Quality Standards. The program was established, under threat of Federal sanctions, to address violations of CO air quality standards at these particular monitoring sites. If such reductions cannot be observed at individual monitoring sites, one is tempted to ask, where would they be observed? It is a curious twist of logic as

to how what was actually stated by the MPCA, and supported by the U.S. EPA, can be interpreted as our erroneous suggestion.

(EPA): EPA's I/M benefits model (MOBILE5a) estimates a 9.2 percent reduction in motor vehicle CO emissions and a 6.8 percent reduction in the overall CO inventory of Minneapolis-St. Paul during the study's timeframe. This reduction is consistent with what would be expected from other basic FM programs.

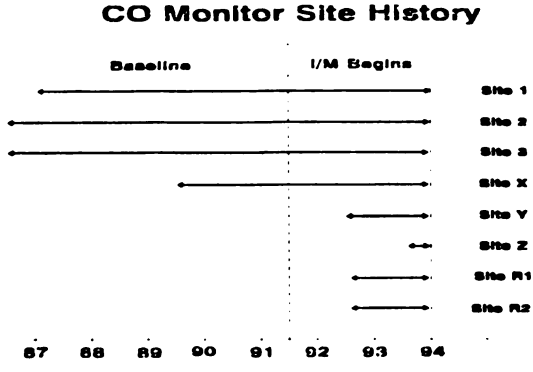
This 6.8 percent figure is certainly very different from the 30 percent figure used to obtain legislative approval. However, even this estimate is optimistic in comparison to the directly measured results we have obtained. Emission inventory figures are notorious for large inaccuracies and frequent revisions, and the EPA's stating such estimates to a precision of 0.1 percent suggests a lack of perspective for the nature of such claims.

The essential point we make is that the one-time benefit of implementing an Inspection and Maintenance program is very small in comparison to the continuous reductions being obtained from better emission control technology and fleet turnover. Over the seven year period of our study, the average CO reduction measured at the three monitor locations is 35.3 percent.

(EPA): Air quality data from five monitoring sites were ignored and no rationale is given for limiting the study to only the 3 sites selected.

Whatever the EPA might think about our decision to limit the study to three sites, it is patently wrong to assert that we gave no rationale. As clearly stated in our paper, the three sites analyzed meet the criteria of providing data over a five year baseline plus 2 year post-I/M implementation period, as clearly stated in our paper. Only these three monitors have been in operation long enough to provide the necessary "before" and "after" data. Data from the five newly installed monitors, as shown by the time-line graph, are obviously not suited for the before-and-after analysis. In addition, two of these monitor sites are operated to fulfill refinery emissions permit requirements, and do not relate to vehicle CO emissions, as pictured.

Figure 1



(EPA): The range of change in ambient CO levels estimated from the 3 monitoring sites (i.e., 1.5 percent, 5.8 percent, and −3.4 percent) shows wide variation and suggests that using data from a limited number of discreet sites for the purpose of program evaluation may be unreliable.

It is not surprising that some variation in these "best-case" measured results is obtained, representing a combined effect of increased oxygenated fuel usage and I/M under differing vehicle operating conditions. What is significant is that two of these monitor sites represent "hot spot" locations where NAAQS violations have occurred. Perhaps what is really at question here is the reliability of designating an entire metropolitan area in non-attainment based on violations at a single monitor site.

(EPA): Site 3—which shows a 3.4 percent increase in ambient CO level and brings down the overall average—has historically shown markedly different results than the other two sites, although the study treats data from all three sites as if they were equal. The authors do not attempt to explain why CO levels increased at this site.

This is simply a mis-statement of our analysis. Monitor site 3 showed a departure from the measured historic trend corresponding an I/M effectiveness of −3.4 per-

cent. A plausible explanation is that I/M programs encourages people to delay regular vehicle maintenance by making decisions for them. It is interesting that EPA is simultaneously criticizing our study for not including—and yet including—all available, relevant data.

(EPA): Important variables were ignored, including the impacts of vehicle speed, mixing height, and operating mode.

(EPA): The study attempts to justify the exclusion of important variables such as vehicle population and vehicle miles traveled (VMT) by averaging daily vehicle count data for sites 1 and 2.

(EPA): The traffic data used for sites 1 and 2 only looks at east-west traffic and ignores north-south traffic.

(EPA): Upon analyzing these incomplete traffic data for sites 1 and 2, the authors found that daily average traffic counts were flat for a period of 12 years.

(EPA): Based upon the above conclusion, the authors' ignored the fact that both vehicle population and VMT for the entire urban area went up during the study's timeframe, significantly offsetting reductions from control strategies such as new vehicle standards and I/M.

(EPA): Because of its location, site 3 (the site which drove down the overall average) is likely to be more influenced by area-wide increases in VMT and vehicle population than are sites 1 and 2. The lack of traffic data for site 3 comparable that used for the other sites makes it difficult to assess the full impact of this influence.

(EPA): Potential increases in CO emissions from industrial and other stationary sources were ignored, even though these account for more than a quarter of the overall CO inventory in the Minneapolis-St. Paul urbanized area.

(EPA): The study only looks at operating data from the first year of program operation—a time period typically used for fine tuning the program.

Each of these related points misrepresents the essential fact that we are measuring—not modeling—atmospheric CO levels. Physical measurements inherently include all relevant variables, known and unknown. What's there is there. The important question is the reproducibility of a given measurement for the identified independent variables. In other words, the agreement between data and analysis establishes the fitness of the analysis.

We fully address this issue in our study by reporting the 95 percent statistical confidence interval with each measured result. For example, the I/M effectiveness measured for monitor site 1 is +1.5 percent, with a confidence interval of ±2.2 percent. If data were available for atmospheric mixing height, operating mode, etc., a tighter confidence interval might be obtained. However, such speculation in no way diminishes the validity of the existing scientific work.

Finally, we know of no reason to believe that the behavior of any of the factors listed above was different in the 2 years following I/M implementation than they were in the 5 years preceding the program. For example, EPA suggests we "ignored" the presence of north-south traffic at sites 1 and 2. In fact total intersection traffic levels were also reasonably constant over the 7 year study period, increasing 3.1 percent per year for site 1 and 1.3 percent per year for site 2. These small changes occurred equally in the before and after periods, offsetting any effects on our results. In addition, the air monitors were located toward mid-block on the east-west thoroughfare, minimizing the importance of stating north-south traffic levels in describing these two monitor sites.

Similarly, though VMT did increase, it increased at about the same percentage rate for the five years before testing as the two years after the start of I/M4 testing. Therefore, its significance is nullified. In the same way, we know of no reason why industrial or other stationary sources changed at a significantly different rate for before and after the start of I/M testing.

In raising all these issues, the EPA suggests that there are vast differences in these factors that may be skewing our results, but no evidence is offered that this, in fact, occurred.

(EPA): Winter data from 1992–93 were ignored, even though CO is primarily a cold weather problem and the program's impact would best be assessed then.

An I/M program is least likely to effect cold weather emission, because testing is only performed on fully warmed vehicles. Inspections are not technically or economically feasible for cold-start emissions or malfunctions on the entire vehicle fleet. And, because higher cold-start emissions are inherent in vehicle design, they would not be reduced by maintenance procedures. Thus, CO emissions which occur at low temperatures are those least likely to be reduced by an I/M program.

As clearly stated in our study, data for an oxygenated fuel control period—Nov. 1, 1992 through Jan. 31, 1993—are not included in our analysis. This is done to separate to the extent possible CO reduction effects due to oxygenated fuel usage from CO reduction effects due to I/M. Winter data for 1991–92 is included in the analysis,

since oxygenated fuel usage was not required then, or during other previous winters.

(EPA): I/M programs generally do not reach full effectiveness until they have been in place for a few inspection cycles, by which time the repair industry has developed the skills necessary to fully repair cars identified by I/M testing.

In fact, the maximum I/M effectiveness may well be achieved in the first two inspection cycles, when vehicles with emission systems that are grossly tampered are identified. The overall I/M program effectiveness we measured is 1.3 + 1.4 percent for the first two program years. EPA's speculation on whether more or less I/M benefit will be obtained in future years is—like so much of what is claimed for I/M effectiveness—simply speculation.

Mr. BARTON. I thank the gentleman. The ranking member has got a pending amendment on the floor and has asked if he can ask his questions first. With Congressman Waxman's permission, we'll allow that.

Mr. WAXMAN. We have no objection.

Mr. BARTON. If that's okay with Mr. Waxman, we will allow Mr. Wyden to question for 5 minutes.

Mr. WYDEN. Mr. Chairman, I thank you for that courtesy. Dr. Stedman, if I might, you contend that remote sensing would be the most convenient way to measure vehicle emissions. Now, the Sacramento study indicated that remote sensing can have a high rate of false positives, over 50 percent. This means that motorists can be unfairly identified and cited for failing to meet emissions standards, be subject to the loss of their vehicle registration and other penalties.

Now, I can't believe that you would consider being falsely labeled a polluter and subject to these sanctions to be convenient, but I'd wonder about your response to this Sacramento analysis.

Mr. STEDMAN. You're leaping way ahead of the Sacramento analysis, but I'd be delighted to respond. You may know that when cars take any emission test and then retake the same test, a significant fraction of them from a passing category show up in a failing category or the other way around. This is nothing unusual about tests.

I have EPA's data on their own IM240 tests, performed, I might add, by highly trained and highly paid mechanics, which showed that when their test failed 22 cars and then those same 22 cars were retested, 6 of them then passed. All tests, even on the same car, performed in the same lab, with the best people, show variability. This is not because the tests are variable, it's because cars are variable.

The 50 percent error that you're talking about is 50 percent of 5.7 percent of the fleet. It's not 50 percent of the fleet. It's about 3 percent of the fleet, if you do the calculation, looking at the entire fleet of vehicles. The EPA's own IM240 test claims to falsely fail about 6 percent of the fleet. So throwing numbers around like 50, you have to be careful what it's 50 percent of.

But more importantly than all of that, first, I don't think we should really be discussing an analysis of the Sacramento program in any detail because the data that the program is based upon are not quality assured. We have no QA on the data. The data have never been released.

The information whether the remote sensors themselves were working properly has never been released. No scientist analyzes data that you haven't made sure that the instruments, the data on

which you're analyzing, have been fully quality assured and released.

But even if you accept all of that and even if you accept the 50 percent failure rate, suppose that you agree completely with the current analysis of Mr. Austin, which I have a copy of here. If you wanted right now to get 10 percent emission reduction from 1,000 cars, you would have to do a treadmill test on all 1,000 cars and you would fail 100 of them. That's 10 percent. And you would get them fixed.

If you want to get 10 percent of the emission reduction from 1,000 cars with remote sensing, you test all 1,000 of them, with no inconvenience, and I would fail, according to their numbers, 57 of them. So 943 of them would not have been inconvenienced. Of those 57, if I sent them to an IM240 test, 30 would pass. They might be irritated about that, but on the road, they would have been a gross polluter.

And I want you to seriously question whether what you're trying to control is emissions on a treadmill, on a schedule basis, or the emissions of cars driving on the road.

Mr. WYDEN. Doctor, I was under the impression, prior to the answer you gave me, and your answer talked about how the data with remote sensing was preliminary and the like, I was under the impression, prior to that answer, that you thought that remote sensing programs ought to be used as a substitute rather than as a supplement to current emission testing programs.

So we can be clear, and I think this is an important point, are you advocating that remote sensing be a substitute or do you see this as a supplement?

Mr. STEDMAN. As a chemist, I think it's more your job to define programs and how they should operate than it is mine. I'm just an inventor of a tool. However, I certainly am on record of saying that remote sensing-based programs could either supplement or replace conventional I/M programs. I believe there is room for both, but I also believe that no program should be done without independent evaluation.

Mr. WYDEN. If remote sensing were to replace regular testing, which you have said is one possibility, from your standpoint, how would you deal with its limitations concerning nitrogen oxides, which obviously is a very significant problem in California and in the northeast?

Mr. STEDMAN. Well, let me start by reviewing for you the results of a program in Michigan in which a very large number of cars were tested, but the ones that were failed were basically failed because of their high carbon monoxide emissions. High carbon monoxide emissions is a great indicator of a broken modern car. When a modern car is broken, it's out of control.

You know that a modern car is a computer-controlled vehicle. When it's not computer-controlled anymore, it's out of control and it swings around in its air-to-fuel ratio. Sometimes it's high CO, sometimes it's high hydrocarbons, sometimes it's high NO_x. The results of that program showed that when vehicles that were failed for high carbon monoxide were successfully repaired by the auto companies, they achieved a 90 percent reduction in CO and a 90

percent reduction in HC and almost a 50 percent reduction in NO, even though NO was not measured by the remote sensor.

That is not to say, by the way, that we've not actively generated remote sensors that are capable of doing exactly this for NO. We don't have double-blind studies. We only have single-blind studies that we can detect NO emissions from passing cars.

Mr. WYDEN. Now, you talked about some of the limitations concerning traditional testing. Given the ingenuity of the American public, couldn't citizens get around remote sensing by, again, the same sort of gaming, cruising through the sensor or altering their patterns? Are you at all concerned that it will be possible to game remote sensing as it has been, as you cite, some of the more traditional programs?

Mr. STEDMAN. You are absolutely correct. I'll just read you two sentences of my testimony which I didn't get to read earlier. When remote sensors are in large vans with logos on the side, drivers can avoid them. When they are placed inside orange road barrels, avoidance would be hard.

There is no question that a remote sensor could easily be placed in an orange road barrel and I defy you to drive to work without driving past an orange road barrel occasionally. So remote sensors could—if avoidance becomes a problem, stealth is an easy thing to do.

Mr. WYDEN. Dr. Stedman, I think I'm especially pleased that you have indicated that you feel that this data is preliminary. I, for one, am not rushing to judgment on this, but I do think that this data is preliminary.

Mr. Chairman, I look forward to hopefully another round after this amendment. I would like to thank you for the courtesy of having the chance to go first.

Mr. BARTON. Thank the gentleman. Dr. Stedman, in title 1, section 182 of the Clean Air Act, it requires that the EPA issue guidance which includes a performance standard achievable by on-road emission testing. Section 182(c)(3)(c)(1) further requires that the State implementation plan include, at a minimum, computerized emission analyzers, including on-road testing devices.

What has the EPA done actually to implement that part of the law?

Mr. STEDMAN. You remember those things as well as I do. Early on, it's my understanding that they tried to take it out as a technical amendment with a red felt pen. Failing that, they have then done two stages of rulemaking. In the first stage, they correctly read the act to say that on-road emission testing was what was required and they interpreted that to mean either policemen pulling over cars and getting an engineer to look at the tailpipe or putting an emission sensor on-board the car and driving around the block with that, which is, by the way, a good way to measure emissions, or remote sensing, or anything else the States could come up with that met the definition of on-road.

So the first step in their interpretation was to take these four possibilities and say that's really what you meant by on-road, even though it may not have been. They then looked at those four possibilities and said, well, some of these are so difficult to do and they take so long and use so much manpower that we're only going to

require States to do these on one-half of 1 percent of their cars or 20,000 cars, whichever is the smaller number.

And I might say, by the way, that that's interesting from my point of view as a remote sensor operator. One-half of 1 percent of the cars in the USA could be measured by a single remote sensor. It would just take one driving around the country to do that. They're that efficient.

That was put in there because——

Mr. BARTON. Do you know what the justification for that particular number is?

Mr. STEDMAN. I am told, I was not present at the hearings, that an EPA officer said that because it was so difficult to do other kinds of on-road measurements than remote sensing and because EPA wasn't about to limit States, forcing them to do remote sensing because they perceived that their broader interpretation meant pull-overs and on-board emission monitoring, that they were forced into that by their interpretation of the act.

So they basically told States, (1) you must use computerized emission monitors or you won't get any credit, and, (2) you must use on-road emission monitoring techniques or some sort on one-half of 1 percent of your fleet, and, at that rate, you will get no credit. So they took one line of one act. In the first four words, you have to do 100 percent of your cars or you won't get any credit. The last four words of the same line, you must do one-half of 1 percent of your cars and you will get no credit. So it's a very unbalanced application of that line.

Mr. BARTON. If the State were to go to the EPA today and want to use remote sensing as a part of an I/M program, what would the EPA's stance be in terms of credits? Would they today give any credit?

Mr. STEDMAN. They certainly are thinking about giving credit. Carol Browner has talked about credit. There are credit draft documents that I have here. But they're still trying to give credit within the confines of their computer model. Now, I would like to see somebody else—I clearly have a biased point of view on this—ask them to give credit for the data itself. So an on-road program should only be given the credit it deserves based upon the on-road measurements, because that's, after all, what we're trying to control.

But if they try and give credit based on the computer model, you won't give them any credit because the computer model says that the gross polluters have all been taken off the road by the current program. Well, if they're not there, you can't get any credit for finding them and taking them off the road again.

Mr. BARTON. Dr. Kittelson, what is your evaluation of the current MOBILE-5 model that the EPA is using? Do you think it accurately reflects what's happening in the real world where you have these centralized tests?

Mr. KITTELSON. Well, it certainly didn't accurately reflect what is going on in Minnesota. An earlier version of MOBILE-5 predicted about a 30 percent reduction would occur as a result of implementing the I/M program and our test results—and, by the way, when I say our test results, these test results were collected by the Minnesota Pollution Control Agency. They were collected at sites

that were being operated by monitor compliance and actually the same sites were used to justify the program.

But if you look at those test results, you can see no more than about a 1 percent effect, whereas they predicted a 30 percent effect. Now, since then, they said, well, that was the early version of our program and now they're talking about numbers nearer to 8 or 10 percent. But, still, their numbers are very different from the numbers that we're actually seeing.

And we're not asking any model to predict this. We're just asking the atmosphere and the atmosphere says your test has had no effect.

Mr. BARTON. I think this is an important point and all the subcommittee members need to realize this. If, in fact, the EPA model is wrong, it's predicting too much credit for some of these programs. If the real world just flat doesn't deliver, even if you had the most stringent centralized IM240 test possible, what that literally means is that in terms of real pollution reduction, we're not going to get there with these tests.

Is that an incorrect conclusion?

Mr. KITTELSON. Based on the Minnesota experience, it vastly over-predicted the centralized program.

Mr. BARTON. My time has expired. I may come back to that point. We'd now like to recognize the gentleman from California, Mr. Waxman.

Mr. WAXMAN. Thank you, Mr. Chairman. Mr. Stedman, in your testimony, you say that we should conduct a real world test of the effectiveness of different I/M technologies. You know, of course, that California has just completed a comprehensive test of the effectiveness of remote sensing.

I'd like to ask you a few questions about this test, although I, again, would repeat it would probably be more advantageous to have the person who conducted the test here to give some of the findings. But the California pilot project was designed to simulate what would happen if an area—in this case, Sacramento—was comprehensively covered by remote sensing devices. In other words, it was designed to assure that remote sensing devices measure the emissions of at least 80 percent of the cars in the area. Isn't that correct, Dr. Stedman?

Mr. STEDMAN. Just the last sentence or everything you've said?

Mr. WAXMAN. The last sentence.

Mr. STEDMAN. The test——

Mr. WAXMAN. The question is they designed a study to see if RSD measured the emissions of at least 80 percent of the cars in the area. Is that correct?

Mr. STEDMAN. I think it's correct. They designed the study to find out how many cars RSD would, in fact, measure.

Mr. WAXMAN. Now, the pilot project demonstrated that remote sensing is capable—let me put it this way. There are about a million vehicles in Sacramento and according to Mr. Austin's testimony, if he were permitted to give it, the remote sensors measured emissions from only half of them. The problem was that many vehicles used side streets that could not be practically covered by the sensors or would be driven at times of the day when the sensors were not out.

Do you dispute that?

Mr. STEDMAN. Yes. It is certainly true that in 9 weeks of remote sensing, only 9 weeks, I might add, 2 million measurements were made and only about half of the vehicles were measured. The reason that half the vehicles were measured was not just because the remote sensors weren't on the streets that those vehicles were driving on.

Mr. WAXMAN. I have——

Mr. STEDMAN. Sorry. I didn't want to interrupt you.

Mr. WAXMAN. I have the protocol for the study and it said they wanted to demonstrate the level of coverage of a full-scale RSD the program would attain. Mr. Austin maintains that they didn't pick up all of these cars; in fact, only half of them. If that were true and you dispute it, but we do have a conflict in testimony, a technology that can measure the emissions of only half of the cars can't provide comprehensive I/M coverage to an area.

Dr. Stedman, what percentage of the high emitting vehicles in Sacramento was remote sensing able to identify?

Mr. STEDMAN. High emitting based on subsequent IM240 tests or high emitting based on on-the-road measurements?

Mr. WAXMAN. What they actually were as proved the IM240 tests.

Mr. STEDMAN. I dispute that comment. Actual is not what a car emits 3 months later on a treadmill when it's been solicited by the State. Actual is what I measured. Would you like to rephrase the question?

Mr. WAXMAN. No. I wouldn't rephrase the question because what you say is actual is what you measure and that's actual. But if your measurements are not reality because a vehicle is not accelerating and emitting more, because a vehicle is not picked up, because a vehicle is not at that particular time even being reviewed by the sensors, then that's not actual.

Now, Mr. Austin would say that the remote sensors identified only 10 percent of the high emitting vehicles in Sacramento. And, of course, if that were true, that would be a very serious flaw with remote sensing. To reduce air pollution in heavily polluted cities, we have to find all the heavily polluting vehicles and repair them. But the California pilot project shows that remote sensing can't do this. All it can do is find 10 percent of the problem cars.

Dr. Stedman, another big problem with remote sensing is how often it produced false failures, how often it diagnosed a car as high polluting when, in fact, the car was a clean car. Can you tell us how often this happened in the California project?

Mr. STEDMAN. Certainly. To the extent—you have to realize I don't have the data. All I have is Tom Austin's report of the data, because the data has not been released to anybody that I know of, but he apparently has got it.

According to the table in his paper, I'll open it up for you, I believe the table in the paper here shows 5.7 percent of the cars that were failed—let me get this correct. A thousand cars go by. Fifty-three of them get failed by remote sensing. Of those 53, 30 would pass an IM240 program which was delivered 3 months later.

Now, that's his 58 percent. I've got the numbers in the table here.

Mr. WAXMAN. As I had read his testimony, and it would be good to have the chairman examine him on his testimony, he would maintain that 50 percent of the time, remote sensing diagnosed a car as high polluting when, in fact, it was a clean car. That's an extraordinarily high false failure rate, if that's accurate. A coin-flipping machine could have performed better than the remote sensing devices.

It seems to me we have here, as a possibility, from this California pilot project, that remote sensing can't even monitor half of the vehicles in an area. Of the vehicles that it does monitor, it will miss 90 percent of the high emitters. And if a vehicle fails the remote sensing test, that vehicle is more likely to be a clean vehicle than a dirty vehicle.

Mr. BARTON. The gentleman's time has expired.

Mr. WAXMAN. Would you be willing to be with Mr. Austin and to testify with him and to debate these issues before the Congress?

Mr. STEDMAN. I have already stated that I was. Last time I heard who was on this panel, I was expecting him to be here. I have no problem whatever debating these matters. But you do need to know that the Sacramento study is neither complete nor comprehensive. It was a pilot program. It isn't complete. It wasn't comprehensive.

Mr. WAXMAN. But it is the only clear real world test we have of this.

Mr. STEDMAN. It is far from the only real world test we have.

Mr. BARTON. The gentleman's time has expired. We will do another round of questions. So there will be more than ample opportunity. I now recognize the gentleman from New York, Mr. Frisa.

Mr. FRISA. Thank you, Mr. Chairman. Just to sort of backtrack for a moment, and this would be directed to anyone on the panel. What is the purpose for on-road testing? Is it that factory-installed devices, over time and through use and without proper maintenance, don't do the job to meet the standards that have been established for car manufacturers in terms of emissions? Anyone.

Mr. STEDMAN. I'll try and take that one. When we pull over cars beside the road—and the largest program that's been done was the Rosemeade Boulevard study in El Monte, California in 1991. When we pull over cars that appear to be gross polluting beside the road at that time, we learn something about the vehicles in this fleet, the gross polluters. We also learn something about the clean cars that are mostly new and low emitting.

These vehicles on Rosemeade Boulevard in 1991, 45 percent of them had egregiously tampered with their emission control systems, up to 65. A further 20 percent had disconnected emission control systems. You couldn't prove they tampered with it or not. Belts were broken. And all of them failed an EPA IM240 test administered at the site at the time.

So there's tampering here, there's legitimate deterioration of manufactured systems built into here. There's also gray market cars. We pulled over a Mercedes. The paperwork said it had all the equipment on it and they actuality didn't. So everything you can think of that can go wrong with a car can go wrong.

Mr. FRISA. Why would someone purposely disconnect a device?

Mr. STEDMAN. In the late 1970's, the devices that were put on were seriously detrimental to car performance and you could buy books for $10.99 from J.C. Whitney that told you how to take them off, and people did.

Mr. FRISA. Meaning, what, better mileage?

Mr. STEDMAN. Better mileage, better power. That is no longer true, by the way. It's an important piece of news. You get a modern car, it makes no sense to disconnect anything.

Mr. KITTELSON. If I could.

Mr. FRISA. Please.

Mr. KITTELSON. I would just like to reinforce that. I think a lot of the motivation for I/M programs came from the days when pollution control equipment really made your mileage worse, your performance worse, when leaded gasoline was cheaper than unleaded. So there was an incentive to run leaded and ruin your emission control system.

All of those things are no longer true. And in addition to that, we're now starting to have more cars coming in with on-board diagnostics, in which the emission control systems self-diagnose and turn on a check engine light, not telling the people whether they have to check the engine because something is disastrously wrong or they have to check the engine because it's just an emission control failure.

But the point is cars are getting better and better in that sense and it seems to me there will be less need for this kind of a program.

Mr. FRISA. At what point in time would you guesstimate that a lot of this testing might not even be necessary because of improved technology, improved diagnostics, and, with the removal of some of those incentives that are no longer there, differences in prices and efficiency?

Mr. STEDMAN. I think the answer probably is never because when one wire is disconnected from the oxygen sensor on your car, the computer goes out to lunch, and you would like to know immediately when that happened because you will get lousy gas mileage. But if you're not the kind of person who follows your gas mileage, the manufacturers have become very clever, even when your car is broken, in making it reasonably driveable. You lose gas mileage, but you don't necessarily lose driveability.

You would like to know because you lost gas mileage. A wire can come off any car any time.

Mr. FRISA. Is it also true, then, that all cars, over time, without proper maintenance, will eventually break down, to some extent, in terms of their emission control?

Mr. STEDMAN. I think the manufacturers would agree with that, but the other very good piece of news is that even old cars with good maintenance have lower emissions than new cars that are broken. UNICAL scrapped a 1977 Toyota as a scrapped car because it met their age criteria, which, on the FTP, met the 1993 new car emission standards. So a well-maintained old car has lower emissions than a broken new car. That's important. I don't want to pillory old cars. It's not necessarily true. They are not all in this category. Only 40 percent of them are.

A tenth of a percent of new cars are in this category. So older cars are more often gross polluting, but many are not.

Mr. FRISA. And, further, is it possible to come up with a general figure in terms of a percentage of, cutting across all methodologies for testing, a percentage of cars out of a general population that don't meet standards day in and day out? I mean, is it a 30 percent failure rate, is it lower? I know that's hard to do.

Mr. STEDMAN. It's a curve. It all depends how you fit the standards. We find, in California Federal testing data, half the pollution from roughly 10 percent of the cars. EPA testing data, half the pollution from 10 percent of the cars. On road testing data, roughly half the pollution from 10 percent of the cars for CO and HC, not so skewed for NO_x.

Mr. BARTON. The gentleman's time has expired.

Mr. FRISA. Thank you. Thank you, Mr. Chairman.

Mr. BARTON. Recognize the gentlelady from California, Ms. Eshoo.

Ms. ESHOO. Thank you, Mr. Chairman. If I might just follow up on the statement that you just made, Dr. Stedman. If, in fact, the testing that you just described, both by the Agency and your device, essentially come out the same, then what's the point or did I not hear you correctly?

Mr. STEDMAN. The statistical results agree completely. I find half the pollution from 10 percent of the cars, they find half the pollution from 10 percent of the cars. And we both agree that fixing those 10 percent is something we have to do. What we disagree on is how to find them.

Ms. ESHOO. How to find them. So the tonnage in terms of emissions and the effect that that has on human beings and our environment, you say, are being measured exactly the same.

Mr. STEDMAN. The statistical distribution are the same. The cars that I might fail on the road seem to be different cars than the cars that IM240 fails 3 months later. If we do those tests on the same day, they turn out to be the same cars. So depending on how you do the test depends on what results you get. But we all agree there are broken cars out there that need to be fixed.

Ms. ESHOO. But what we're trying to get at is the most effective way to measure and then do something about it, so that we can reduce the tonnage, and you're saying that both are the same.

Mr. STEDMAN. I'm saying that we all agree that half the pollution comes from 10 percent of the cars. The EPA thinks the most effective way to identify those is to test every car on a treadmill every 1 or 2 years. I maintain that one of the most effective ways to do that is to get out there with some of these remote sensors, and perhaps not even send a ticket to anybody, but merely put a billboard up that tells you your emissions. Some people are responsible enough to fix it.

Ms. ESHOO. What is the follow-up to the billboard, though? I mean, I know when I get a notice from the DMV that my license is going to expire, well, I could read a billboard to check your driver's license, but I get a notice in the mail and it's up to me to respond. Otherwise, there is something that is going to happen as a result of that.

Now, in taking my automobile in for inspection, the person at the center or the gas station or whomever is designated—I know because I do it—will say either the mechanism of your automobile is working or it's not, and then it's up to me to have to follow up on that.

If, in fact, there is a flag that goes up that says that my car is emitting, how do you follow up with that so that there is, indeed, a follow-through so that the owner of that automobile, depending upon which one it is, with the wonderful things that you've brought here to demonstrate that, how does that remote sensing set off the remote sensor in the human being to actually get something done?

Mr. STEDMAN. That's a good question and it's a programmatic question.

Ms. ESHOO. No. It's a human effects question.

Mr. STEDMAN. I will try to address it, however. We've invented a new tool that does the measurement. Once you've got the tool, there's a lot of things you can do with it. I happen to believe the first thing you should do is just inform people of the invisible emissions they can't see and don't necessarily know about, purely information. Some people will act upon that with no follow-up.

Ms. ESHOO. Well, how does the remote sensing do that? It's measuring if someone's going 35 or 75 or 22 miles an hour.

Mr. STEDMAN. Yes.

Ms. ESHOO. But does it have a——

Mr. STEDMAN. It measures in front and behind each car.

Ms. ESHOO. And how does the driver or the owner of that automobile receive that information?

Mr. STEDMAN. At the moment, there is no way to do that except in the mail. But in the next few months, we're going to put up a variable message sign, just like the thing that says your speed is something. We're going to have a sign that says your emission is something. So driver information as you drive by.

Ms. ESHOO. It's voluntary.

Mr. STEDMAN. Absolutely.

Ms. ESHOO. It's voluntary.

Mr. STEDMAN. The first program I would do would be voluntary. Then, after that, the next program I would do would be tamper inspections, because I know that, at least a few years ago, half of these cars are tampered. So after I set up a voluntary program, the next thing I would do would be tell people that if they get a red light on my remote sensing billboard, which is just free and voluntary, down the road, there is going to be a policeman and an engineer who is going to pull that car over.

Now, that immediately gives everybody a year-round incentive to keep their emissions out of the red zone, and that's what we're trying to do. We're trying to create an incentive year-round to be low, not an incentive one day every 2 years to be low. So just those two programs alone, public information and tamper inspections, no video cameras, no tickets, no license pulling, would be a pretty strong incentive to keep your car a low emitter.

And if that didn't work, then you might start wanting to send people tickets, sending them to treadmill tests, whatever you want to do. But I'm not a social scientist, so I shouldn't design programs.

Ms. ESHOO. I think we always have to consider how we can do things better. I've been around air issues for some time and most of it in local government and how to make it work better. I wish that the air could have been cleaned up on a total voluntary basis. I think that it's been demonstrated that it hasn't and it won't.

So I applaud you for advancing this and for working hard on it, but I really don't think that it's going to be done by voluntarism. I just don't—excuse the expression—sense that.

So thank you for being here today and I'd like to thank you—and I think that you are really a clean of heart in what you are trying to advance and that there be more than one way, but I think that the aspect of voluntarism is not as workable as you might think that it is. I think that's what is at the heart of your proposal.

Thank you.

Mr. BARTON. The gentlelady's time has expired. Before I recognize Mr. Crapo, Mr. Stedman, on that final point, it's obvious that once you have the data, regardless of how you obtain it, the Agency in charge of enforcement could adopt a voluntary program or could adopt some sort of a coercive program with regards to compliance. Is that not true?

Mr. STEDMAN. It's certainly true. Carrots and sticks are good approaches. One Agency has suggested that rather than sending notices in the mail to the gross polluters that they should bring their car in, they should send notices in the mail to the majority of clean cars that they don't have to bring their car in. In other words, give people an incentive, again, to be driving a clean car all the time. So there's a number of ways you can regulate once you've got the information. And I think they're all valid.

Mr. BARTON. The Chair would now recognize Mr. Crapo of Idaho.

Mr. CRAPO. Thank you, Mr. Chairman. I really have just one line of questions and I'd ask this to any of the members of the panel who would like to respond. That is in this concept that we are focusing on of looking at the remote sensors versus basically having people go in and have their cars tested at a certain time each year, to me, it seems that the question that we're trying to get at is how do we, either through voluntary measures or some other measures, get the highest level of compliance and reduce the emissions.

Does the approach of having people go in on the treadmill type approach and get tested every year result in any better compliance than a voluntary type approach would be if we were to give people information about their emissions? Do we have any studies or analyses of that?

Mr. SCHERRER. If I could interject a comment here. I believe our Minneapolis/St. Paul study illustrates the point that all cars have emissions and we are really talking about incentives or maybe even disincentives for people to do the regular maintenance that their cars require.

What we may see is that presenting people with an annual sticker that they have passed a test is actually a disincentive for them to perform the regular maintenance that would keep their emissions low. Perhaps a more regular analysis of emissions, more than the annual program, something like Professor Stedman's drive-by advisory, would, in fact, be an incentive for people to perform the regular maintenance.

But either way, we must keep in mind that this very large number of vehicles that have very low emissions have to be kept that way by the people operating them.

Mr. CRAPO. It seems to me that what you have said makes common sense. I guess the question I have is do we have any—I realize that just because it makes common sense doesn't mean that we have to do it around here. But do we have any studies in this area or other areas that would document and give us some backup for this what appears to be common sense approach?

Mr. STEDMAN. I can tell you that, and probably from the Minnesota study, the evidence is that scheduled emission testing is fully supported by 80 percent of the population who have low emitting vehicles. Unfortunately, it's a biannual incentive to cheat for the 10 or 15 or 20 percent who choose to cheat. Therefore, because they're the ones that drive the high emitting cars, the programs don't work. It's a human factors problem.

Now, how well a voluntary program would work, how well a program that tried to provide an incentive to keep your car low all the time would work, nobody knows because these programs have never been tried. They will be tried. The first attempt to try this is with DOT funds, from the IST program in Colorado, with the Colorado Department of Transport overseeing what's going on, Colorado State University evaluating how well the project is being done, and the good old University of Denver setting up the device and making sure the billboard comes on at the right time so you get your emissions.

So we are going to test a purely voluntary, no ticketing at all, purely voluntary program, how well do people respond to information.

Mr. CRAPO. Is it fair to say that we've got enough information with the annual or biannual inspection approach that we can see that that doesn't work, but we don't have enough information about the voluntary approach to be sure yet and we need to test it or try it?

Mr. STEDMAN. I don't think so. I'll take EPA's side on this one. They think they have pretty good evidence that the kind of idle testing we've been doing in the past does not work. Their computer model says that the new test is so good that it definitely will work. I don't happen to believe that, but such programs are going on around the country and if they get properly evaluated, we will find out.

Mr. CRAPO. Thank you.

Mr. KITTELSON. Could I just make a comment on the proper evaluation?

Mr. CRAPO. Yes.

Mr. KITTELSON. One thing that I really hope EPA does is to start to look at programs on the basis of what impact they have on the atmosphere rather than looking at pass/fail rates, what the comparison between remote sensing and IM240 is and so on, because remote sensing, IM240, any of the tests that you do represents a snapshot of reality. They represent what's happening at that particular moment. They don't tell you what's really going on in the atmosphere.

And to find out whether a program is working, we should look at what happens in the atmosphere, not what happens at a snapshot.

Mr. CRAPO. Thank you.

Mr. BARTON. Thank you. The Chair would now recognize the gentleman from Michigan, Mr. Dingell.

Mr. DINGELL. Thank you, Mr. Chairman. Mr. Chairman, you've set us on a very interesting set of questions here which trouble me. First of all, Dr. Stedman, could you, not at this time, but later, submit to us your suggestions both as to criticism of EPA's testing program and your suggestions as to how that testing program should be properly constructed? Also, their computer model, if you please, so that we can have some appreciation of the precise character of the defects in which you find yourself concerned.

And if you, Professor Kittelson or Mr. Scherrer, would like to do the same thing, it would be appreciated, please.

Now, this morning, Dr. Stedman, you suggested a real world comparison of candidate programs. Are you saying that it is premature to make policy decisions concerning centralized versus decentralized testing, as well as the appropriate role for remote sensing based on the data that we now have?

Mr. STEDMAN. I so state. Rand Corporation so states. A peer-reviewed, anonymously peer-reviewed publication by Dr. Lawson, who isn't here, also, so states.

Mr. DINGELL. Now, I notice that you've said that a lot of these programs that we have been discussing this morning and the assumptions and the calculations upon which they're based have not been peer reviewed. Is that correct?

Mr. STEDMAN. As far as I know, the EPA MOBILE modeling has not been peer reviewed and their predictions for the benefits of an IM240 program have also not been peer reviewed.

Mr. DINGELL. Now, I'm going to read off a list of things and I want you to give me a quick comment, but perhaps you could give some more detailed comment at a time later. One, how significant is motorist behavior in reducing I/M program effectiveness? Two, how much of the problem can be attributed to motorist-mechanic collusion? Three, how significant is mechanical incompetence on the part of the mechanic?

Four, is centralized testing more effective than decentralized testing? Five, should testing be separated from repairs? Six, how frequent a test is necessary? Seven, what type of test is best for diagnosis? Eight, can remote sensing be used to effectively enhance an I/M program? I think this is an important question. Then, nine, can we do away with scheduled testing all together and rely on random roadside pullovers and/or remote sensing only? And, ten, is specific testing for evaporative losses necessary, such as pressure and purge testing that is not already being evaluated by current I/M procedures?

Now, I'm not asking you to comment on all of them. I will submit those to you and you can give them to us for the record. But what comment would you give us quickly on that list?

Mr. STEDMAN. Love it. I've got ten questions. The first three things that you said are significant, are very significant, and the last of the three, mechanic performance and repairs, that is abso-

lutely critical. Testing doesn't clean the air. Fixing cars cleans the air. So unless the mechanics successfully—the identification is a small part of the program. Repair is the biggie.

There's not much doubt that centralized testing is better than decentralized. There's not much doubt that the separation of test and repair is a good idea. I like to think that on-road testing is a wonderful example of that. You can't repair a car that's going by at 30 miles an hour.

How frequently should you test a car I think is a terribly important point. The EPA computer model says testing once a year and testing once every 2 years is almost as good. The reason for that is that they have a repair lifetime that lasts forever. They think a car that's fixed lasts forever.

The data show that, at least in California, cars that are repaired to pass an I/M test are only clean on the day that they are repaired. So we have——

Mr. DINGELL. Why is that?

Mr. STEDMAN. Because people are fiddling things to pass the test, not committing themselves to keep their car clean forever, and that's what the test tells you. The incentive is to pass the test that day, not to keep the car clean.

Mr. DINGELL. So your thesis would be that you'd have to have some random roadside sensing done to assure that the fiddling not take place.

Mr. STEDMAN. That, I think, is one of the best uses and that, of course, makes it a very good thing to do. By the way, roadside sensing, of course, is essentially worthless as a diagnostic tool. You can't beat a good treadmill as the diagnostic tool, but you can——

Mr. DINGELL. But you say go on in and get your car tested.

Mr. STEDMAN. Of course.

Mr. DINGELL. And then——

Mr. STEDMAN. Of course.

Mr. DINGELL. Now, could we do away with scheduled testing all together and rely on random roadside pullovers and remote sensing?

Mr. STEDMAN. I have no evidence that you can do that, but I also have no evidence that you can't do that, because no one has ever tested that. I like to think that it is possible, but, of course, I can't prove it.

Mr. DINGELL. So you think that's one of the things that this committee ought to have answers on and that EPA ought to have answers on. Is that correct?

Mr. STEDMAN. I think that people ought to pilot programs that try all of these things to find out which ones work rather than mandating the one-size-fits-all program that was at least going to be the case a few years ago until this committee started meeting.

Mr. DINGELL. The reason I raise these to you is these are some of the questions that Dr. Lawson, who couldn't be with us today, rather, some comments that he had had on these matters and I wanted to get your views.

Now, what would we do in the interim while a proper test of the different alternatives that lie before us—in other words, centralized testing, testing which would not be centralized, but which would be

done through the allowance that individual garages do it, or the roadside testing and what would we do during that interim period?

It appears that we have some significant lack of important knowledge on this matter, do we not?

Mr. STEDMAN. You ask a scientist if we're lacking knowledge. Of course, we're lacking knowledge. More work is needed.

Mr. DINGELL. On this particular matter.

Mr. STEDMAN. More work is needed on this particular matter. I wouldn't be a scientist if I didn't say yes to that question, but it is, unquestionably. The State of California is a perfect example. One could apply a different program to Fresno and to Bakersfield and see which one worked best. That would be a wonderful thing to do. People have talked about doing that, but it's never been done.

There are 8 or 9 different configurations you could come up with and nobody knows which would be the best.

Mr. DINGELL. All of which, you would assume, would work in practice. Is that right?

Mr. STEDMAN. Yes.

Mr. BARTON. The gentleman's time has expired. There will be a second round of questions. The Chair would now recognize Mr. Cox of California.

Mr. COX. Thank the chairman. We've got an interesting panel, comprising the person who co-invented the remote sensing device, which is an alternative means of measuring pollution, and people who have studied what we currently do and have told us in rather stark terms that it's not working or, to be more particular, that it's not very cost-effective.

In 1989 dollars, according to your report, the cost imposed on the States was over a half-billion dollars. Is that right?

Mr. STEDMAN. That's correct.

Mr. COX. Now, what we got for over a half-billion dollars you attempted to measure in Minnesota. And in Minnesota, if I read the conclusion of your study correctly, you found that the improvement in carbon monoxide levels attributable to the inspection program, as against that which is attributable to newer cars increasingly comprising the mix of traffic on the road, was within the margin of error of your study, around 1.4 percent, and, statistically, therefore, either zero or meaningless or insignificant. Is that correct?

Mr. KITTELSON. That is correct.

Mr. COX. So we find, then, that we're spending a whole lot of money for no measurable result. Is that right?

Mr. KITTELSON. That's the experience in Minnesota, that's right. Of course, we have to be very careful to generalize our results. We don't believe the way EPA does that one size fits all. We would like to see studies like ours done in other areas, in other climates, to see what the effect is, but there's a terrible tendency not to do that. People want to, again, take a snapshot of how a car is running either on a treadmill or when it drives by a remote sensor or whatever and not look at what's happening in the atmosphere.

Now, there's a reason for that. It's very difficult to look at what's happening in the atmosphere because there are so many other things going on. That's why our study is a little bit unique, because Minnesota had no program and then a centralized program. So

there was a start/stop, a before/after, and there were no other really significant changes in other factors so we could really do that.

But I think one could construct experiments like that around the country and then we'd know how these programs work.

Mr. STEDMAN. I want to add, if I may, that California did do such an experiment and Colorado did look at its air quality data. Dr. Larry Anderson of UCD looked at air quality in Colorado to try and evaluate the oxy-fuel program, as well as the I/M program. He, again, found very little effectiveness.

In California, the important study was done by the Bureau of Automotive Repair in 1987, maybe about 1988, 1989 and 1990. In 1988, they pulled over cars beside the road in an I/M area. In 1989, they pulled over cars beside the road in a non-I/M area in California. In 1990, they went back to an I/M area. There was no significant difference in roadside idle emissions or roadside tampering between those three surveys.

Mr. COX. Let me ask a direct question about EPA's promotion of this program which you believe doesn't work in Minnesota. Did they claim any results? Did they predict any results for Minnesota from their program?

Mr. SCHERRER. In written testimony before our legislature at the time the program was adopted, our State Pollution Agency claimed that the program would produce a 30 percent reduction in carbon monoxide. This written testimony was backed up by letters from the Regional EPA Administrator, noting that the EPA had reviewed computer modeling.

Mr. COX. So I take it that now EPA is going to be in the position of saying, well, there must be something wrong with your study because we said it was going to improve things and your study said it didn't, so you made a mistake. Have they said that?

Mr. SCHERRER. We have received what we have been told are EPA's comments on this. This has been published in a publication by EPA called the "I/M Briefing Book." We have submitted in our written testimony to the committee our answers to those comments.

Mr. COX. You're under oath and I'm going to ask a question that I want you to think about in that connection. Do you work for EPA in any respect? Are you paid by EPA?

Mr. SCHERRER. I am not, Mr. Cox.

Mr. COX. All right. Professor Kittelson?

Mr. KITTELSON. I have, in the past, had EPA-sponsored research. I have not for several years.

Mr. COX. And in this connection, for this study, you are not paid by EPA.

Mr. KITTELSON. No connection.

Mr. COX. All right. Do any of you know whether or not Mr. Austin is paid by the EPA, the Tom Austin that's been referred to here?

Mr. STEDMAN. I believe he has a current contract, as I do.

Mr. COX. All right. Is Mr. Austin's view that your study is right or wrong and that EPA is right or wrong? Has he expressed a view?

Mr. KITTELSON. I don't know. He hasn't expressed——

Mr. COX. Put it this way. Has he expressed a view about the I/M program? Is he in favor of it?

Mr. WAXMAN. What do we have here from him?

Mr. COX. Well, he works for EPA and we're going to hear from EPA and we can ask them directly.

Mr. WAXMAN. If the gentleman would yield. He does not work for EPA, is my understanding. He was hired——

Mr. COX. By EPA. He's a consultant, a paid consultant, paid by EPA.

Mr. WAXMAN. That's not my understanding.

Mr. COX. Well, all right. We'll ask EPA when they come up.

Mr. BARTON. The gentleman's time has expired. We don't need to get into a——

Mr. COX. I'll pursue this further.

Mr. BARTON. [continuing] work history of witnesses that are not here. The Chair would now recognize the gentleman from California for a second round of questions.

Mr. WAXMAN. Thank you, Mr. Chairman. Just to follow along those lines. If you didn't do your work for EPA, who paid for your work, Mr. Kittelson?

Mr. KITTELSON. No one. The University of Minnesota, in a sense. It was a study we decided to do on our own.

Mr. WAXMAN. And Mr. Scherrer?

Mr. SCHERRER. That is correct. The words on a degree say that the degree is granted with privileges and obligations.

Mr. WAXMAN. I asked who paid for it, not what degree he had. You were doing——

Mr. SCHERRER. We paid for the study of our own funds, sir.

Mr. WAXMAN. And, Dr. Stedman, you have a financial interest in the remote sensing device, don't you?

Mr. STEDMAN. That is correct. I share it with Dr. Gary Bishop, the co-inventor. I should say I have an interest in the device produced by RSD. I have no interest in the device produced by Hughes.

Mr. WAXMAN. Dr. Stedman, do you think it's a waste of time for us to have an I/M program or is it your view that we ought to make sure an inspection and maintenance program is the most effective because it can reduce the emissions that go into the air?

Mr. STEDMAN. I wholeheartedly agree with the last statement. Without a successful I/M program, none of the other programs we're doing will work. Tied to new cost standards won't work, alternative fuels won't work. A badly maintained methanol car has higher emissions than a well maintained gasoline powered car.

Mr. WAXMAN. So I/M is worthwhile. Now, it sounds like Mr. Kittelson and Mr. Scherrer have some questions about that. Is that accurate? Do you think I/M is not a useful tool or do you think that the way it's being conducted is not useful?

Mr. KITTELSON. Each of us has a slightly different point of view, I think, but my opinion is that the way it's conducted in Minnesota, it is not useful.

Mr. WAXMAN. Mr. Scherrer.

Mr. SCHERRER. I certainly would concur with that. I believe the data is very clear on this.

Mr. WAXMAN. You concur in what?

Mr. SCHERRER. That the I/M program, as conducted in Minnesota, has not demonstrated useful results, and that is in contrast to the computer modeling that says beneficial results are being obtained.

Mr. WAXMAN. So our job is to see what strategy makes the most sense, because there are pollution reductions that can be achieved through an inspection and maintenance program that will assure us that vehicles that are driven on the road pollute less. Isn't that accurate?

Mr. STEDMAN. Absolutely correct, yes. The EPA says it's the most cost-effective thing you can do and I agree with them.

Mr. WAXMAN. The reason I'm trying to hurry is because I've got the time limit, but let me just ask you specific questions and see if I can get specific answers. The IM240 program, I gather, is considered by EPA the state-of-the-art in terms of the most exhaustive analysis of the emissions from a vehicle. Do you know whether that's the accurate statement as to EPA and do you question that?

Mr. STEDMAN. I think as an I/M test, you would be correct in that statement.

Mr. WAXMAN. Now, then the issue is do we want every motorist to take their car in once or twice a year to do the most exhaustive and most accurate test and most complete test that we have available. Is it your view that we don't have to do that because remote sensing can give us the information about the vehicles that pollute the most and that we don't need to have all of them go to the IM240 test?

Mr. STEDMAN. I'd like to think that would prove to be the case in the future. I can't, of course, prove that now.

Mr. WAXMAN. Well, I would like to think that would be the case, as well. But in the meantime, if we're deciding on strategy to get us the most emissions, if every car went through the IM240 test, we know that would give us the most accurate test as to the snapshot of the emissions at that moment.

Mr. STEDMAN. Absolutely. At that moment, the IM240 test is a better test than an idle 2500 test.

Mr. WAXMAN. Now, your test, a remote sensing one, also is an instantaneous snapshot of the vehicle exhaust, but emissions from vehicles are highly variable. In some modes of operation, clean vehicles can appear dirty in a snapshot picture, and in some modes of operation, a dirty vehicle can appear clean. Isn't that an accurate statement?

Mr. STEDMAN. Absolutely, yes.

Mr. WAXMAN. The only way you can reliably tell what a vehicle emissions is is to test the vehicle over a period of time in a standard vehicle inspection. Isn't that an accurate statement?

Mr. STEDMAN. I don't agree with that statement.

Mr. WAXMAN. Why don't you agree with it?

Mr. STEDMAN. Because when we do snapshots beside the road on Rosemeade Boulevard on El Monte, 93 percent of the cars that we pull over fail a California smog check test even though they all have stickers on them, and 100 percent of those that got to IM240 failed IM240. So it's pretty clear that our snapshots are telling you something as long as you get the car right away. Three months later, when you only get half of them and the State sent you a let-

ter saying please, Mr. Waxman, will you bring your car in, somehow you don't always get the same cars or they don't seem to have the same emissions.

Mr. BARTON. The gentleman's time——

Mr. WAXMAN. The only thing I can say is what you've just said is inconsistent with what we've been told by Mr. Austin and that's the area of disagreement that I would put on the record. If we had Mr. Austin here, we could have him show why he disagrees with that statement. But I appreciate your testimony. Thank you.

Mr. BARTON. The gentleman's time has expired. I now recognize Mr. Burr of North Carolina.

Mr. BURR. Thank you, Mr. Chairman. I'll be very brief. Professor Kittelson, I'd like to go back to one thing. I just want to make sure I understood a statement that you made correctly. You're stressing that we need to look at the atmosphere as much as we need to look at how we test cars. Wasn't that, in fact, the intent of all this, was to clean air?

Mr. KITTELSON. That's right.

Mr. BURR. In your estimation, is the EPA doing that?

Mr. KITTELSON. The interesting thing about having a non-compliance area redesignated as a compliance area, there's a ratchet built into the law. Minnesota's monitoring sites were used to identify the fact that we are a non-compliance area on carbon monoxide. We had a certain number of exceedances and, on the basis of that, we are designated non-compliance.

However, the fact that we no longer have exceedances and we have a continually downward trend in measured air quality is not enough to have us designated compliance. The EPA model has to also say that everything is going to be fine. So they add on this model, as well as the atmospheric data, and it's the model that we really have a problem with.

Mr. BURR. Dr. Stedman, just one quick question, if I may. EPA looks for a better way to test cars. I mean, that's what we're talking about. Could I deduct from what you've said about the fact that we have cheaters in our society that it is EPA's intent to get a better reading on the emissions or is their attempt to find a better way to catch those people who are trying to circumvent the system?

Mr. STEDMAN. I believe both. You can ask them tomorrow. There is no question a loaded mode IM240 test is a better test of the emissions of a car than is an idle 2500 idle test. There's no doubt whatever about that. The question is is a scheduled test the right way to control on-road or emissions or air quality.

Mr. BURR. Is there any way, in your estimation, to have a scheduled test where you eliminate the possibility for somebody to manipulate, through their own contact with their vehicle, the results?

Mr. STEDMAN. You should ask this also of the next panel, but it is my understanding that it is possible to cheat on an IM240 test. It's just a little more difficult. But we only have to do it every 2 years instead of every year.

Mr. BURR. So, in fact, if we identified that a large part of our problem is a result of those people who choose not to comply or at least to only comply for 1 day every year.

Mr. STEDMAN. That's right. And they are complying. The law says thou shalt have a clean car on January the 27th. It doesn't say you should keep it that way for 2 years.

Mr. BURR. But nothing that we've talked about, other than possibly the system that you have co-developed and possibly some others that come up, can take a snapshot of the emissions on a year-round basis without motorists knowing exactly where you're going to be, when you're going to be there and one that inconveniences them as little as possible.

Mr. STEDMAN. That's the whole point. I really do believe that a properly operating system, based on remote sensing, could be made that gave people a real incentive to keep their cars low emitting year-round. Whether you choose to do that incentive with carrots or sticks is a legislative kind of question.

Mr. BURR. My last question, and to any of you that would like to answer, is how much of our compliance problem, in fact, is an individual who chooses only to comply on 1 day of a given year.

Mr. STEDMAN. The limited evidence from California, and Dr. Lawson is the right person to ask this, is that that is most of our problem, and I would guess 60 percent. The other 40 percent comes from the natural variability in the emissions of broken vehicles. We repaired a Mercedes in Denver that had a wire to the oxygen sensor that was loose. When the wire was on, it would pass any test. When it was off, it was a gross polluter.

If you own such a car and you know that its emissions are variable, you're going to keep taking it to the test until it passes. You're not going to fix it.

Mr. KITTELSON. Could I just make one additional comment? This is a personal experience. One of my cars failed Minnesota's I/M test and I took it to a garage for repairs and the owner of the garage was one of our former engineering students, who is in the business of tuning cars to help them pass the emission test. And when he saw me come in, he just about died laughing. He thought this was a wonderful joke.

But the first thing he asked me was, well, look, do you want to pass the test or do you want a clean car? To pass the test, it's either $50 or $100, I don't remember which. To have a clean car, you're going to have to replace your feedback carburetor and it's going to be $750.

He knew he had me over the barrel, so I paid the $750, but I don't think most people would have made that choice.

Mr. BURR. And just for clarification, the $50 or the $70 was to bring the car up to a level of compliance, but not to address the whole thing. I don't want to take that as an interpretation that he was taking $50 to fill out something for a car that didn't meet the standards.

Mr. KITTELSON. No. He would have cleaned out the idle mixture in such a way that I could pass the Minnesota idle test.

Mr. BURR. On that day.

Mr. KITTELSON. On that day.

Mr. BURR. Thank you.

Mr. BARTON. The Chair has given every member of the subcommittee an opportunity to ask one round of questions. The Chair would ask unanimous consent that the gentleman from Maine, who

is not a member of the committee, but who has attended, be given 5 minutes for questions. Is there objection?

[No response.]

Mr. BARTON. Hearing none, Mr. Longley is recognized for 5 minutes.

Mr. LONGLEY. Mr. Chairman, thank you very much. I just might note for the record that my district was the first district in the country last July to undergo the enhanced IM240 testing system and I will just volunteer for the record, before I ask some questions, that the program lasted all of 6 weeks and it was suspended with bipartisan disgust at the ineffectiveness and the inconsideration that it appeared to inflict on the 600,000 people in my district.

I want to just kind of make sure I understand some of the testimony. What all three of you are basically saying in one way or the other is that you're going to find lower pollution results with newer models of automobiles and that, in many respects, that's a reflection of improvements in technology.

Mr. Stedman, I know that Mr. Dingell had asked you for some information. I don't know if there is a chart that might be available that would provide some graphic or visual explanation of a breakdown of cars by age and by compliance, if you will, with the pollution standards so we could get a better fix on to what extent it's either older cars or cars that haven't maintained.

And I get a sense, again, from your testimony, that compliance is a function of age and maintenance; that is, a lack of maintenance on a newer car could produce the same results as an older car without the technology.

Mr. STEDMAN. Correct.

Mr. LONGLEY. I want to focus on the comments relative to the computer modeling that's used by the EPA. What you seem to be saying is that there is a debate between—and I don't know if I've got the terms right—a special testing type of mechanism or program similar to the once every 2 years test that the EPA is mandating versus active monitoring cr, if you will, focusing on whether an automobile meets the standard on 1 day every 2 years or whether it meets the standard on an ongoing operational basis.

This information is devastating. In your experience, have you presented this to the EPA? Has there been any discussion? How have we ended up with a situation that seems to have ignored some very fundamental data? I leave that as an open question for any member of the panel.

Mr. STEDMAN. It's been a problem. But you have to realize that the EPA naturally tends to send anybody away with a flea in their ear who has a better idea, because once a week someone walks into their office with a snake oil that is supposed to control the problem and doesn't. So they have developed that resistance over the years, quite rightly.

And when I walked in and said, hi, guys, I've got a better idea, I can solve your problem, they rightly told me to go home. I like to think that I'm beginning to convince them, but we started out with questioning my parentage and my financial affiliations.

You mentioned versus, remote sensing versus scheduled emission testing. It may not end up versus. It may end up as well as. It may be that the best program would be scheduled emission testing

every 4 years because that's about how often an evaporative system breaks and you can't touch evaps with remote sensing yet, but supplemented with remote sensing to get the gross polluters in within 3 months of when they break.

Mr. LONGLEY. What you're each suggesting, and I don't mean to put words in your mouth, is that there is absolutely no scientific connection between improved air quality and the implementation of enhanced IM240 testing programs. Is that your testimony?

Mr. STEDMAN. Independent studies that have been done have never shown a connection.

Mr. KITTELSON. In Minnesota, we did not have enhanced. We had the idle test and there, there was absolutely no measurable impact on air quality. As we've said, about 1 percent, with an uncertainty of 1 percent.

Mr. LONGLEY. Is that your experience, too, Dr. Scherrer?

Mr. SCHERRER. That's correct.

Mr. LONGLEY. I just would answer with the statement when the emissions program was implemented in Maine, an official of the EPA actually came into the State and suggested that if we took every car in the State of Maine and drove it into Casco Bay, that the State could still be in non-compliance under the standards of the Clean Air Act. And furthermore, in my office as recently as a month ago, the administrator was unable to provide me with any specific science relative to the percentage of pollutants in Maine that were site-oriented as opposed to transported across State lines.

It's just striking me that this is more not a program oriented against dirty air as much as it's oriented against drivers.

Thank you, Mr. Chairman, for the opportunity to ask questions.

Mr. BARTON. Thank the gentleman from Maine. The Chair would announce that Mr. Cox is going to ask one second round of questions, Mr. Wyden has one additional question, I have 2 or 3, and then we'll go to our next panel. Mr. Cox.

Mr. COX. Thank you, Mr. Chairman. Dr. Stedman, your invention has been used worldwide. You've tested a remarkable number of cars. How long ago did you make this invention of the remote sensing device that we're discussing?

Mr. STEDMAN. We had thought about it in the late 1970's. We got the first funding in 1986. We had a prototype on the road in April of 1987.

Mr. COX. So you've been testing cars with the prototype and subsequent advancements for how many years?

Mr. STEDMAN. 1987 through 1995, and it's almost April, so 8 years almost, yes.

Mr. COX. Eight years. In 8 years, have you ever been asked to testify before Congress?

Mr. STEDMAN. No.

Mr. COX. Not the House or the Senate.

Mr. STEDMAN. Correct.

Mr. COX. No committee or subcommittee.

Mr. STEDMAN. No.

Mr. COX. You said you worked for the EPA. How closely has EPA worked with you?

Mr. STEDMAN. The University of Denver has research contracts with the EPA, one of which is current, which covers some of my work; sometimes in atmospheric chemistry, but at the moment I have a contract covering development of an oxides of nitrogen sensor for the remote sensor.

So it's a research contract with the University of Denver, which I am the principal investigator of.

Mr. COX. So on your research side, you've got some relationship there. But in terms of the policies we're talking about, this is a first.

Mr. STEDMAN. In terms of hearings, yes. When EPA put out 40 CFR Part 51, the big document, for public comment, I submitted comments to the public docket.

Mr. COX. Okay. I want to thank the chairman. We've had this explosive public view up for discussion in Congress, because I don't know why in the world you wouldn't have been up to talk about this before considering that Congress has, in the meanwhile, passed laws and EPA has required programs that we are now hearing from the other two witnesses on this panel are suspect, to say the least.

Does everybody on this panel agree with the statistic that we hear so often that half of the pollution is caused by 10 percent of the cars? Is that rough justice, statistically speaking?

Mr. STEDMAN. It's awfully close.

Mr. KITTELSON. I have no reason to question it. I've followed Dr. Stedman's work and I'm basing my belief on what he's done.

Mr. SCHERRER. I would add the caveat, Mr. Cox, that that is a snapshot in time. That does not prove that the same 10 percent of cars are causing the 50 percent pollution over a period of time.

Mr. COX. Do you want to explain that, just briefly?

Mr. SCHERRER. Again, that is based on measurements that are snapshots in time. That statistic does not establish that it is the same 10 percent of cars that are producing the 50 percent of pollution over time. So that's why——

Mr. COX. Because people might fix their cars or they might run——

Mr. SCHERRER. They might break. The emissions are, of course, very variable.

Mr. COX. Okay. But for public policy purposes, we can be satisfied that the lion's share, I'm now going to use non-statistical terms, the lion's share of the problem is caused by a relatively small fraction of the total cars on the road. That would be a plain English way of saying that half the pollution is caused by 10 percent of the cars. Is that about right?

Mr. STEDMAN. That's certainly validated by FTP data from the State of California and from EPA.

Mr. COX. Okay. So as a policy matter, what we ought to be asking is whether we're spending our dollars most efficiently to get after the gross polluters. Is that sensible? Do you agree with that?

Mr. STEDMAN. Yes.

Mr. COX. And I would infer from your study that the inspection and maintenance program in Minnesota that you studied doesn't do that, because the results that you found, the improvement in carbon monoxide levels, essentially would have occurred anyway for

other reasons. And, yet, we spent a whole lot of money, in 1989 dollars, what you mentioned in your study, and you mentioned that the year was 1991 and that the amount that it cost 33 States was over half-billion dollars.

Can anybody update that for us and tell us what we think we're spending now?

Mr. STEDMAN. I can tell you that a Sacramento B article, in roughly 1991, said California alone was spending half a billion dollars annually on its emission testing program.

Mr. COX. So given that California is large, but one of the States, is it fair to say we're spending over a billion dollars, likely, in 1995?

Mr. STEDMAN. Yes, absolutely.

Mr. COX. So we're spending over a billion dollars. We have some data from Minnesota that suggests we get zero result from what we spend, at least in Minnesota. We know that we need to get after gross polluters, half the pollution being caused by 10 percent of the cars. How do we do that? Is remote sensing a means of doing this?

It strikes me that this panel is put together sensibly for that reason because what we've got here is a radar gun, in essence. A radar gun gets speeders. Now we've got a way to track down polluters, catch them. Even though they don't go in for these tests, if they're the ones who are avoiding it, and you told me, Dr. Stedman, half the people that comprise the gross polluters are knowing cheaters. Maybe we need a radar gun to track them down. Maybe this is a divide that EPA ought to take seriously.

Mr. STEDMAN. I believe they're taking it more seriously now, too.

Mr. COX. Thank you.

Mr. BARTON. Thank the gentleman. I recognize Mr. Wyden.

Mr. WYDEN. Thank you, Mr. Chairman. Let me see if I can sum it up, as it looks from this vantage point, Dr. Stedman. You said to me earlier that, in your view, the Sacramento study, and I think I'm quoting you accurately, is neither complete nor comprehensive.

Now, I am under the impression that this is certainly a very large study. It may be the largest of remote sensing to date. Now, if this pilot study isn't comprehensive, then it doesn't appear to me that there really has been a study that would qualify as comprehensive.

At the same time, you told me earlier that remote sensing could be used as a substitute for current inspection and maintenance programs. Given that, aren't you really saying that Congress should at this point take a leap of faith and adopt remote sensing as the primary testing mechanism, when, at this point the data really isn't in to support it?

Mr. STEDMAN. Far from it. I hope my testimony is suitably humble and that I'm suggesting, as I read before, a set of different I/M programs should be independently evaluated at different locations to find out what does work. I like to think that a remote sensing-based program, because of the way you can send the right incentives to people, if it's done right, could work better than a scheduled program. I can't prove that. Until these studies are done, nobody knows.

The Rand report is a very good example of that. Let me just say what they say here. There is no plausible way to quantify the emis-

sion benefits of a proposed new program. Evaluation of benefits on the thousand-car study is so uncertain. The models are based on unreliable data and the EPA performance standard approach is too flawed to be taken seriously.

And that doesn't mean I'm right. What Rand is saying is that nobody is right. I'm perfectly happy with that situation.

Mr. WYDEN. I think, and I'm going to leave it on this point, Doctor, your answer seems to me to be a thoughtful one. You feel that the data is not yet fully clear. At the same time, you're willing to say that this could be a substitute for the existing kinds of programs. What troubles me is that if the data is still in the preliminary stage, I don't see how one can argue let's make it a substitute.

But your answer with respect to the qualifications on the data strikes me as logical and thoughtful. I'm of the view that we don't have enough data on this. I think the jury is out. As my friend, Mr. Barton, feels so strongly about this, I'm going to spend a lot of time analyzing this before I come to a conclusion and I hope that we do have a chance to fully get all the facts on this before we adopt policies that would be, at least to some extent, irreversible on this issue.

I thank the gentleman.

Mr. BARTON. Thank the gentleman. The Chair recognizes himself for the final questions of this panel. I will try to be brief.

As has just been pointed out, the data is still somewhat preliminary. The law has been on the books on remote sensing since 1990. Dr. Stedman, do you have an idea of how many dollars the EPA has spent to evaluate remote sensing since it became the law that it should be used?

Mr. STEDMAN. I certainly can't give you a result, off the top of my head. They've given contracts to me. They've done studies in Indiana and in Arizona. I couldn't come up with a number, off the top of my head. But I can tell you that they have done some studies.

Mr. BARTON. Is it a large number or a small number?

Mr. STEDMAN. I would guess hundreds of thousands of dollars.

Mr. BARTON. Hundreds of thousands out of billions of dollars available. I mean, that's a fair statement. To the extent there have been problems identified with remote sensing, and there have been some, how many dollars, if any, has the EPA spent to try to improve the technology? To the extent they've identified the problem, have they made any attempt at all to spend any money to improve the technology to solve the problem?

Mr. STEDMAN. Yes, they have. We have a current contract. We have had contracts from EPA almost continuously since we started doing this program, and the contracts have been of the order of $50 to $100,000 over periods like a year to 18 months. That's been to improve the technology and to do some studies for them.

Mr. BARTON. We've had remote sensing as a requirement since 1990. So that's 5 years, 4 years. And during that time, there have been a small number of studies to evaluate it and some $50,000 to $100,000 contracts to actually improve the methodology.

Mr. STEDMAN. That is correct.

Mr. BARTON. Do you consider that to be a major effort on behalf of EPA to work to fairly evaluate and, if necessary, improve the

technology or would you characterize it more as lip service so that they could not be blamed that they weren't doing anything at all?

Mr. STEDMAN. I would have characterized it as the latter.

Mr. BARTON. And during that time period, how many dollars has EPA spent on the IM240 technology?

Mr. STEDMAN. I'm sure it's a lot. You'd have to ask them.

Mr. BARTON. So millions of dollars, perhaps tens of millions, maybe even hundreds of millions. But more than $50 to $100,000.

Mr. STEDMAN. I believe that's the case.

Mr. BARTON. With regard to the Sacramento test that Mr. Waxman was talking about, the Sacramento test was for 9 weeks in duration. Is that correct?

Mr. STEDMAN. That is correct.

Mr. BARTON. During that 9 weeks, how many cars and trucks were tested?

Mr. STEDMAN. My understanding is there were 2 million tests made.

Mr. BARTON. Two million tests made.

Mr. STEDMAN. Yes.

Mr. BARTON. In that same time period, how many cars and trucks could have been tested with the same number of IM240 test equipment?

Mr. STEDMAN. About 100th of that. So it would have been about 20,000.

Mr. BARTON. Twenty thousand. So in 9 weeks, 2 million tests were conducted with remote sensing and IM240 would have been able to test 100th, which would be approximately 20,000.

Mr. STEDMAN. That is correct.

Mr. BARTON. So the data, while it's not been released, no one questions the fact that the tests that were conducted measured correctly the pollution level at the time that test was conducted.

Mr. STEDMAN. I believe that our experiments and others have shown that.

Mr. BARTON. So it is accepted that if a remote sensing device records a pollution level at that time, that that is what actually the vehicle was emitting. The problem is would the vehicle pollute the same a week down the road or 2 weeks down the road, of if it were to be notified to send in to the centralized test, would perhaps the motorist not, in fact, improve the vehicle so he would pass the test. Is that a correct statement?

Mr. STEDMAN. That is correct, yes.

Mr. BARTON. So in summary, you have and others that have evaluated remote sensing have established that it correctly measures, at the time, pollution.

Mr. STEDMAN. Correct.

Mr. BARTON. You've established that. You've established the fact that you can test large numbers of vehicles; in fact, a much larger number of vehicles in a given time period than the IM240 test.

Mr. STEDMAN. That's correct.

Mr. BARTON. What you have not and don't apparently wish to establish is that it should be now used totally as a substitute for the IM240 centralized test.

Mr. STEDMAN. Well, it can't be a 100 percent substitute because you can achieve no diagnosis from a half-second snapshot of a pass-

ing car, even if you measure it 5 or 6 or 7 times. You still just know it's a gross polluting car. You don't know whether it's because the air filter is clogged or because the owner has taken off all the pollution control equipment.

You do need other testing. Dynamometer-based testing is very good for diagnosing what's wrong with the car. Also, at the moment, remote sensing has no capability in evaporative emissions. So to the extent that evaporative emission failures which can be repaired can be found by other tests, then, by all means, let's do those tests.

Mr. BARTON. Well, I want to thank this panel. As has been pointed out by Mr. Cox, this is the first time you've been invited to testify before a House or Senate committee or subcommittee on this subject. That time is long past due.

We will have officials from EPA here tomorrow and they will be given an opportunity to comment on your testimony and, of course, their evaluation of your testimony. We do appreciate your willingness to come forward on the public record and we'll be back in touch. So this panel is excused.

We would now welcome our second panel to come forward. We have Ms. Lynn Scarlett, who is the chairperson for the Inspection and Maintenance Review Committee, State of California, and Mr. Joel Schwartz, who is a member of the California Inspection and Maintenance Review Committee professional staff.

I would like to welcome each of you to our subcommittee. We'd like to make you aware that this is an investigative subcommittee and, as such, it has had the practice of taking testimony under oath. Do you either of you have any objection to testifying under oath?

Mr. SCHWARTZ. No.

Ms. SCARLETT. No.

Mr. BARTON. The Chair also advises you that the rules of the House and the rules of the committee gives you the right to be advised by counsel. Do either of you wish to be advised by counsel?

Ms. SCARLETT. No.

Mr. SCHWARTZ. No.

Mr. BARTON. In that case, if each of you would rise and raise your hand, I will swear you in.

[Witnesses sworn.]

Mr. BARTON. Be seated. We will now recognize Ms. Scarlett for a 5-minute opening statement.

TESTIMONY OF LYNN SCARLETT, CHAIRPERSON, CALIFORNIA INSPECTION AND MAINTENANCE REVIEW COMMITTEE; AND JOEL SCHWARTZ, CALIFORNIA INSPECTION AND MAINTENANCE REVIEW COMMITTEE STAFF

Ms. SCARLETT. Thank you, Mr. Chairman. I am Lynn Scarlett. For the record, I am Chair, current Chair of California's Inspection and Maintenance Review Committee. That committee, so that your members understand, has three primary functions. First, we are to review the results of the two pilot studies that have been much m tioned this morning, one pilot study on remote sensing in Sac- nto, the other on equipment test types, which was done in El

Monte, California, looking at the IM240 and comparing it with alternative test types.

As a clarification, I want to point out that Mr. Austin did not conduct the test. It was alluded to the fact that he did. He did not.

Our second function is to make policy recommendations. Our third function is to evaluate the performance of the State's I/M program once it is up and running or once the new program is up and running.

I want to underscore that our committee's goal is to have a program that can demonstrate the achievement of real emission reductions in an ongoing fashion and in a cost-effective manner. Let me underscore that we view the function or the success, that is, of programs as a function of many factors, and I want to underscore those because there's been a lot of focus on technology. Program success goes beyond technology. This goes to some of the issues that Ms. Eshoo mentioned.

First, you have to identify high emitters. And I want to point out something that has not been pointed out, which is in our El Monte study, we found that of the marginal emitters—that is, cars that simply failed the test, but just marginally—a half of them had higher emissions after repair than before. Hence, it is important to go after the high emitters, where you can secure real reductions.

Second, one must diagnose the emission problems, as has been pointed out. Third, we want to secure enduring repairs, not simply repairs for a moment. Four, we want to verify that those repairs did occur and that emission reductions are maintained over time. And, finally, as has been alluded, one needs to provide a program that gives consumers and automotive technicians the appropriate personal motivations to properly maintain vehicles and endure those repairs over time.

Now, I want to move on briefly to U.S. EPA guidelines and standards for program evaluation. EPA affirms its commitment to flexibility and we laud that commitment. Unfortunately, our review of their performance standard and the credits they give for different program options shows that that commitment to flexibility is not being translated into regulations and program evaluation criteria.

What is the central problem? U.S. EPA relies exclusively on models, not on real world evidence of program performance. Why is this a problem for the State of California and other States? Number one, the model, as has been indicated, does not meet a reality test, and I want to make three points in this regard.

First, the model results don't match well with actual ambient air data. We heard information from Minnesota. I want to point out, in behalf of Doug Lawson, who is not here, that his data show that emissions in the real world are sometimes 2 to 2½ times higher than the model predicts.

Second, the numerical values of specific inputs in the model are not always based on empirical evidence or full evidence. Most especially, and I will have Joel Schwartz supplement this with his comments, is the 50 percent discount that U.S. EPA applies to decentralize; that is, test and repair programs in relationship to test-only programs. The model assumes that decentralized programs are 50 percent less effective than EPA's ideal program. The I/M Commit-

tee has found no empirical justification for this discount, and Mr. Schwartz will go into that.

Third, and equally important and also as has been alluded to this morning, some potentially critical program elements are not incorporated into the model at all or are given only crudely determined credits. Specifically, for example, as was discussed with RSD, currently there are no credits for RSD. EPA is looking at putting credits in for there, but our concern is that those credits will not accurately reflect RSD's role as a deterrent in tampering and as a monitor of ongoing emissions over time.

What is the bottom line of all this and of U.S. EPA's modeling? Basically, U.S. EPA is requiring that States' program performance be evaluated against a model whose results are based on unsubstantiated assumptions. There is no real world evidence that EPA's ideal program, the enhanced I/M, using IM240, for example, will, in fact, achieve the modeled reductions, as we've heard earlier. Yet, States are asked to show equivalence of their programs to this model.

Second, States have no incentive under this context to introduce new program components that may, in fact, improve program performance, unless there are already parameters within U.S. EPA's model. If it's not in the model, you don't really get credit for it.

In conclusion, at issue is not whether we pursue our clean air goals. We are in full agreement in the I/M Review Committee that those goals should be pursued. At issue is whether the State of California and other States are going to be able to implement I/M programs that have a strong prospect of achieving air emission reductions that endure over time as opposed to the clean-for-a-day phenomenon. This requires review, ultimately real world evaluation, not using the model as the goal standard of program success.

We need to measure success by measuring real air emissions in the atmosphere and adjust our programs over time accordingly.

Thank you.

[The prepared statement of Lynn Scarlett follows:]

STATEMENT OF LYNN SCARLETT, CHAIRPERSON, CALIFORNIA INSPECTION AND MAINTENANCE REVIEW COMMITTEE

I. INTRODUCTION

On behalf of the Inspection and Maintenance Review Committee of the State of California, I am pleased to present testimony regarding current federal regulatory requirements for state inspection and maintenance programs in non-attainment areas.

California's I&M Review Committee is committed to: (1) recommending inspection and maintenance (I&M) policies that will achieve vehicle emission reductions in California; and (2) ensuring appropriate evaluation of the State's I&M program to determine program effectiveness.

The I&M Review Committee's fundamental goal is cleaner air in California; its focus is on how I&M programs can be designed to assist in the most cost-effective achievement of that goal.

II. BACKGROUND

California's I&M Review Committee, appointed in 1994 by the Governor and the State's legislature, has three primary functions: (1) to review results of two pilot projects undertaken by the State of California to examine I&M program options; (2) to make policy recommendations to the State of California regarding its I&M program; and (3) to evaluate the performance of the State's I&M program.

Pursuant to a Memorandum of Agreement signed on March 21, 1994 between the State of California and the United States Environmental Protection Agency (USEPA), the State funded two pilot studies to examine several issues relevant to understanding I&M program performance. The first of these studies, performed by the California Air Resources Board, evaluated claims by USEPA that a transient, loaded mode IM 240 inspection test was superior to other test options in properly identifying vehicles that exceeded allowable emission levels. The second study, performed by the State's Bureau of Automotive Repair, evaluated the prospects of deploying remote sensing devices (RSD) on a community-wide basis to "read" the emissions of a significant percentage of vehicles in a geographic area and to accurately identify gross emitters.

Results of these two pilot studies are still being evaluated. However, initial results show three important findings: (1) identification of high-emitting vehicles does not vary significantly by test type; (2) test type does not significantly affect repair effectiveness; and (3) remote-sensing devices set up over a 10-week period performed at least one "reading" of nearly one-half (over 400,000) of the vehicles registered in the test area of metropolitan Sacramento. This "coverage" would appear to be adequate for use of remote-sensing as a deterrent to tampering and as a means of identifying high emitters during periods between any regular vehicle testing.

III. Policy and Regulatory Issues

Motor vehicles are a significant source of air pollution in California. Emissions from motor vehicles may account for some 60 percent of hydrocarbon emissions, half of all nitrogen oxide emissions, and as high as 90 percent of carbon monoxide emissions. However, studies conducted over the past several years have demonstrated that government agencies' official inventories greatly underestimate mobile source emissions. In urban areas, for example, mobile sources and their associated emissions may account for as much as 80 percent of hydrocarbon emissions. Despite outstanding gains in new-vehicle technologies, which have resulted in dramatic reductions in average emissions from new cars, a subset of vehicles on the road continues to contribute substantially to air emissions.

Achieving desired air quality standards in the State therefore requires that in-use emissions from these high emitters be reduced. As indicated in the work of Dr. Douglas Lawson, Dr. Donald Stedman, and others, vehicle emissions are highly skewed, with a small percentage of vehicles accounting for a very large percentage of total emissions. Programs that identify highpolluting vehicles and reduce their emissions are, thus, an important component of achieving improved air quality in California.

California's I&M Review Committee is committed to recommending measures that will assist the State in implementing a successful inspection and maintenance program. *The I&M Review Committee defines such a program as one that can be demonstrated to achieve required reductions in vehicle emissions in the most cost-effective manner possible.*

A. PROGRAM SUCCESS: USEPA PERSPECTIVE

To date, USEPA has focused primarily (though not exclusively) on three variables as relevant to program success:

1. Test Type

Implicit in USEPA literature and regulations on I&M programs is the view that test type is a critical determinant of program success. Specifically, USEPA has argued for increasingly sophisticated test types, with an emphasis on a transient, loaded-mode, dynamometer test (IM240) to replace idle tests.

Results of California's pilot test comparing IM240 with other test modes undermine claims that test-type is a critical variable for program success.

2. Locus of Test

USEPA literature and regulations assume that separating test functions from repair activities significantly improves program success. Thus, for full program credits USEPA requires test-only programs and assumes that programs combining test-and-repair functions will be half as effective as test-only (usually centrally operated) programs.

A California I&M Review Committee assessment of this assumption demonstrates that empirical data do not support USEPA's claims for test-only programs. At best, we can conclude that neither test-only nor test-and-repair programs have worked well; and, though no test appears to have worked particularly well, some test-and-repair programs have worked better than some test-only programs and vice versa.

Other factors that affect human behavior and incentives to comply appear to be more critical to determining degree of program effectiveness.

3. Repair Cost Limits

USEPA literature implies that past programs with low repair-cost limits were an important impediment to achieving significant emission reductions from I&M programs.

No data are available to assess this assumption.

B. ALTERNATIVE PERSPECTIVE ON PROGRAM SUCCESS

Test type and location of test do not appear to bear significantly on program success or failure. Dr. Jerry Aroesty, et al., note in a report for California's Senate Transportation Committee that "a preoccupation with the process for screening and identifying vehicles misses the point: an effective system must not only find the broken cars, but it must fix them. The measure of success is total emission reduction, not merely identification rates."

A report prepared by Joel Schwartz for California's I&M Review Committee concludes "Whether an I&M program is centralized or decentralized has not been an important factor in determining I/M program effectiveness." The report notes that "trends in ambient ozone and CO levels between 1983 and 1992 show that, on average, regions with decentralized I/M and regions with centralized I/M had about the same reduction in the two pollutants."

Program success is likely, instead, to be a function of a broader and more complex set of issues. At least five components of I&M programs appear relevant to program success.[1] These include the ability of a program to: (1) Identify high-emitting vehicles rapidly; (2) Diagnose emission problems associated with high-emitting vehicles; (3) Result in effective and enduring repairs of high-emitting vehicles; (3) Verify that repairs occur and that emission reductions are maintained over time; (4) Provide a context in which consumers and automotive technicians have strong personal motivations to properly maintain vehicles, avoid tampering of emission-control equipment, and secure enduring repairs and reductions in vehicle emissions.

The current focus by USEPA on programs that use high-tech test equipment to perform periodic (annual or biennial) inspections on all vehicles in test-only stations: (1) fails adequately to take into account motorist and mechanic behavioral responses to test programs; (2) targets all vehicles equally rather than focusing on high emitters from which one can anticipate achieving significant reductions after repairs are performed, (3) ignores the need for real-world verification that emission reductions are being achieved.

IV. Regulatory Framework: Critique of USEPA Model and Assumptions

In its regulatory guidance document for I&M programs, USEPA states that "states have the flexibility to design their own programs if they can show that their program is as effective as the model program used in the performance standard." California's I&M Review Committee lauds a federal government commitment to state flexibility.

However, USEPA has failed to translate that commitment to flexibility into their regulations or program evaluation criteria. To determine program equivalence, USEPA relies exclusively on a mobile emissions model, not real-world evidence of program performance.

A. USEPA MODEL

USEPA's mobile emissions model includes variables for fleet composition, weather, vehicle speed and vehicle miles traveled, and other factors relevant to modeling current and future vehicle emissions. In addition, the model includes assumptions regarding the expected impact on vehicle emissions associated with a select subset of I&M program features. The model includes few variables relevant to consumer behavior associated with program type; and, while credits for remote sensing have not been established, based on initial discussions regarding how to address remote sensing credits, they are likely to provide only crude accommodation of impacts from

[1] Dr. Jerry Aroesty, et al. suggested four of these five components in their report, "Restructuring Smog Check: A Policy Synthesis," prepared for the California Senate Transportation Committee. In that report, they state, "everything we have learned about I/M in the past few years shows that all of these phases must be effective for the entire system to operate properly and economically." They note that focus on whether or not a program separates test from repair activities "is an overly simplified approach to a far more complex problem and neglects the important behavioral, technical and social dimensions of an I/M system."

remote-sensing (ongoing on-road emission tests between scheduled testing) of vehicles.

For a given state, showing program equivalence requires inputting into the model a subset of specific features of a state's I&M program (along with other data regarding fleet composition, miles travelled, etc.). Each I&M program feature is given a numerical value in the model regarding its assumed impact on air emissions. Some program features, particularly relating to behavioral incentives and disincentives, are not included at all in the model. The result is that these features are not included in USEPA's evaluation of a state's program and its potential (and actual) effectiveness.

Where USEPA does include features relating to behavior, numerical assumptions appear to be arbitrary and skewed toward assuming that centralized test-only programs result in near-perfect compliance. For example, USEPA's model uses an assumption of 96 percent compliance for test-only programs and also assumes a high degree of repair effectiveness.

Using all inputs, the model is then run to estimate total emissions at different points in time. These results are compared to results derived when USEPA's "ideal" program features are input into the model. The performance standard for any location is not a set of measurable, real-world emissions reductions. Instead, a computer modeling of USEPA's ideal enhanced program is compared to a modeling of a state's program to determine program equivalence. In short, the model is the performance standard.

Why is this a problem for the State of California and other states? This performance standard poses a fundamental problem for states since the model is just that a model. Its utility as a measure of emission reductions is a function of how well the model actually reflects real-world emission dynamics.

Evidence presented to California's I&M Review Committee suggests that the model does not meet a "reality test." Consider three points in particular:

1. *Model results regarding air emissions do not match well with actual ambient air data and other empirical evidence regarding vehicle air emissions.*

Dr. Douglas Lawson has noted that "top-down" comparisons of ambient data with the modeled emission inventory show that hydrocarbons are 2 to 2.5 times higher than the modeling inventory predicts. Likewise, in "tunnel studies" in which an urban vehicle fleet's emissions were measured in tunnels, hydrocarbon and carbon monoxide measurements of vehicle emissions were two to four times greater than predicted by the model.

Moreover, as Dr. Jerry Aroesty has noted, "modern emissions control systems often exhibit unstable and highly variable emissions characteristics when they deteriorate... The implications are... that estimates of I/M performance based on crude, highly aggregated emission system deterioration models fail to reflect variability and other real world failure modes." Dr. Aroesty concludes that "even today, the 'official' models still appear to be playing catch-up with the data."

2. *Numerical values of specific inputs into the model are not always based on empirical evidence.*

The most important of these factors is the 50 percent discount that USEPA applies to decentralized (test-and-repair) programs. As an input into the model, all test-and-repair programs receive a discount of 50 percent for emission reductions relative to reductions estimated to occur with centralized (test-only) programs.

USEPA has stated that this discount was derived pursuant to data from tampering surveys and audits of state programs. USEPA used these data to compare centralized and decentralized programs. Their published reports of these data conclude that decentralized programs are half as effective as centralized (test-only) programs.

California's I&M Review Committee disputes this claim. In an independent review of the tampering surveys and state audits, California's I&M Committee finds:

> little difference in vehicle tampering rates among areas with test-only programs and those with test-and-repair programs;
>
> no empirical evidence from state audits that test-only programs function better than test and-repair programs. Specifically, (1) USEPA analyzed data that included errors in favor of centralized programs; (2) its audits, which were not designed to compare program types, included (possibly unintentional) methodological and other biases against decentralized programs; (3) USEPA did not collect audit data that could be used to assess I/M emission reductions associated with program types.
>
> ambient air data discussed by USEPA and used to compare test-only with test-and-repair programs in its "I/M Briefing Book" (but not used in its initial development of the 50 percent discount) did not correct for differences

in vehicle mileage among states, included selection bias in the vehicles evaluated in test-only sites, and did not show that cars in test-only areas were uniformly cleaner than in test-and-repair areas.[2]

3. *Some potential program elements are not incorporated into the model at all, or are only given very crude numerical credits within the model.*

In particular, the model is ill-suited to incorporating program elements that affect consumer and automotive technician behavior. For example, the State of California and other states have considered adding on-road use of remote sensors as part of their I&M programs. The model does not calculate emission credits for: (a) any deterrent effect against tampering that remote-sensing might have; (b) any incentive effect remote-sensing might have on consumers to seek full vehicle repairs during a periodic smog check to avoid being "caught" by a remote sensor at a later date; (c) any "oversight" effect remote sensing might have on automotive technicians whose repairs could be challenged if motorists were "caught" by a remote sensor after repairs had been completed; and (d) any "second-check" effect remote sensing might play in identifying vehicles that passed a periodic test but soon after again became high emitters. (That these program elements may be difficult to model does not reduce or eliminate their potential significance for program success. The difficulty in isolating the effects of these behavioral variables in a model underscores the importance of measuring program results by using real-world air emission observations).

B. RETHINKING PROGRAM EVALUATION

What is the bottom line of this discussion regarding USEPA's modeling? On February 1, 1995, at a meeting of California's I&M Committee, USEPA reaffirmed that state I&M program performance would be evaluated against the model.

In light of the importance USEPA gives to the model, the I&M Review Committee asked that USEPA perform a "reality check" of the model to determine how well the model results mirror real-world air emissions for a given area. USEPA underscored that no reality check of the model is possible, since the model is simply a series of aggregated and averaged assumptions that may not reflect any specific real-world situation. USEPA suggested that the only way to check the model would be to examine the specific assumptions or parameters that make up the model.

California's I&M Review Committee finds: (1) that current real-world evidence indicates that the model results diverge substantially from observable ambient air data and urban tunnel study data; (2) that examination of at least one important model parameter—that of the 50 percent discount for test-and-repair programs relative to test-only programs—shows no empirical evidence for the model's assumption regarding test-only and test-and-repair programs. USEPA is requiring of states that their program performance be evaluated against model results that are at least in part based on fiction rather than fact. Use of the modeled results as the "gold standard" against which state programs are evaluated has serious consequences for both state flexibility and potential program effectiveness.

First, there is no real-world evidence that USEPA's "ideal program" will, in fact, achieve the reductions shown by USEPA's model. Thus, state programs are being asked to show equivalence to an unsubstantiated model. Success is defined by the model rather than by achievement of real-world emission reductions. The end result may be that states will expend large sums of money implementing programs that show equivalence with USEPA's model but achieve little real-world emission reductions.

Second, USEPA neither offers nor plans for any real-world evaluation of programs to determine whether programs have been successful. This approach is at odds with most other air emission programs in which real-world air measurements assist in evaluating program success. It is also at odds with common sense.

Third, in the absence of real-world measurements states have little prospect of making program adjustments to ensure program success, since "success" is simply

[2] The I&M Review Committee analysis of data cited by USEPA shows that USEPA's comparisons of fleet emissions in Arizona and California do not support concluding that test-only programs perform better than test-and-repair programs. While many other factors may influence differences in fleet emissions between California and Arizona, even an analysis of Arizona and California fleet emission data show a more complex picture than that offered by USEPA. Our analysis of the Arizona and California data showed that vehicles in Arizona (test-only program) have CO emissions that are about the same as in California (test-and-repair program). Arizona cars are cleaner for hydrocarbons; California cars are cleaner for nitrogen oxides. Adjusted for emissions standards, the Committee finds that California cars are cleaner for CO; Arizona is cleaner for hydrocarbons; and the fleets are the same for nitrogen oxides.

a function of showing that a state's program, characterized as a series of inputs into USEPA's model, will result in emission reductions calculated by running the model that are equivalent to results with USEPA's model run of its preferred enhanced I&M program.

Fourth, states would have no incentive to introduce program components that may improve program performance unless those elements are already parameters within USEPA's model. Since USEPA significantly downplays or omits behavioral aspects that affect program success, program elements (such as use of remote-sensing as a deterrent, incentive, emissions monitor, and oversight mechanism) that provide incentives for consumers to seek "clean cars" rather than merely smog certificates are in effect discouraged. (As noted earlier, that these program elements may be difficult to model does not reduce or eliminate their potential significance for program success. The difficulty in isolating the effects of these behavioral variables in a model underscores the importance of measuring program results by using real-world air emission observations).

C. REMEDY: WHAT DO STATES NEED?

At issue in the current I&M debate between USEPA and the states is not whether clean air goals ought to be pursued. At issue is whether the State of California and other states will be able to implement I&M programs that have some prospect of achieving air emission reductions in the most cost-effective manner.

This challenge requires:

1. State Flexibility

USEPA currently pays lip service to the concept of flexibility. However, its reliance on a model that includes unverified assumptions, omits important parameters, fails to give credit for all possible program elements, and has been shown to be an inaccurate reflection of real-world emissions, significantly narrows program options for states.

2. Program Evaluation

Currently, no systematic, real-world program evaluations exist. Program success is measured against a model, not empirical evidence that a program has achieved some prescribed reductions in emissions. That developing protocols for measuring such reductions is difficult offers an insufficient excuse to discard altogether any effort at empiricism.

3. Attention to Personal Behavior

USEPA has over-relied on technocratic aspects of program design, emphasizing such matters as equipment test type and identification of vehicle emissions. The State of California has over 20 million vehicles on the road, many millions of drivers, and over 9,000 service-station operators that repair vehicles. Key to any program success will be whether institutional, technical and economic aspects of I&M programs provide a situation in which individuals have incentives to drive clean-operating vehicles and automotive technicians have both incentives and opportunities to repair "broken" vehicles.

USEPA posits that separation of test from repair activities will deter fraud. Empirical evidence does not appear to sustain this view. Hence, states need to be able to focus on other options, such as that offered by remote sensing and other program enforcement elements, to create conditions where consumers have a motivation to minimize vehicle emissions. Measuring program success by use of real-world data (rather than a model) allows for the impact (if any) from these behavioral aspects to "count" fully in program evaluation.

4. Attention to High-Emitting Vehicles

Most—about 80 percent—of vehicles on the road are relatively clean. USEPA continues to assume that the best program is one that measures emissions from all cars. Doing so has two adverse effects: (1) money spent to identify all emissions absorbs resources that could be expended to ensure that high-emitting vehicles are repaired (or removed from the road); and (2) targetting all vehicles equally opens up the prospect that through the test and repair procedures, marginal emitters may actually be rendered less clean—a prospect observed in California's El Monte pilot study and elsewhere. States need the latitude to decide where they will get the "biggest bang for the buck," again, measuring program performance by examining real-world evidence rather than a USEPA model.

V. CONCLUSION

A minimal first step to providing states with broader program flexibility would be achieved through elimination of USEPA's 50 percent discount for test-and-repair programs. A second step, still operating within the confines of a modeling approach to assessing program equivalence, would be to fundamentally revisit and revise that model to better take into account a wide variety of program variables not now considered and not now given a numerical "credit" value. Ultimately, however, program effectiveness should be assessed through real-world data. The third step, thus, would be to align I&M programs with other air emission programs in which real-world emissions data are used to evaluate performance.

In conclusion, I would like to thank the House Subcommittee on Oversight and Investigations for having held these hearings.

Mr. BARTON. Thank you. I now recognize Mr. Schwartz.

TESTIMONY OF JOEL SCHWARTZ

Mr. SCHWARTZ. Good afternoon. My name is Joel Schwartz and I'm on the staff of the California I/M Review Committee. Recently I completed a study of the empirical and scientific underpinnings of U.S. EPA's 50 percent discount for decentralized I/M programs.

To do my study, I collected data on 50 percent discount from EPA and from other sources. The data fell into three classes; EPA's audit data, which EPA supplied to us, EPA's tampering data, which EPA supplied to us, and then other studies of on-road emissions, of the sort that we've just heard about from the other panel.

I evaluated these three sets of data to see what they could tell us about the actual effectiveness of centralizing decentralized I/M programs to evaluate the 50 percent discount. First, let me briefly go through the audits. These are audits that EPA conducted and, also, States conducted of different I/M programs around the country to see if they were following certain guidelines. EPA did audits of improper testing rates, waiver rates and other program aspects.

But EPA, in their I/M documents, focused on rates of improper testing in I/M programs. I looked through the audit data on improper test rates and I found a number of problems. First of all, the data in the original audit reports sometimes didn't match up with the data that EPA presented in its summary and policy documents on I/M. For instance, EPA reports a zero percent improper test rate for Maryland's centralized program, but their original audit actually found a 40 percent improper test rate.

In addition, some of the audits had biases against decentralized programs. For instance, in the Missouri decentralized audit, the audit report makes it clear that stations were targeted for covert audits based on expectations that they would perform poorly rather than at random. So EPA probably measured a higher rate of improper testing than was actually the case in Missouri's program.

There were a number of other examples of this that we can go into later, if you'd like. So the audits had these biases. They had data discrepancies. Another problem with the audits is that the audits weren't actually tied to on-road emissions of vehicles. There's really no way to go from the audit data to the on-road emission effectiveness of a program.

EPA simply appears to have assumed that if they found testing was done properly, that the program was effective in reducing emissions.

Now, we have data that makes it clear that there are other ways to avoid I/M. For instance, in Arizona's I/M program, where EPA

measures a very low improper test rate, the Arizona Auditor General released a report in 1988 where they did a behavioral study. They interviewed mechanics and motorists and 88 percent of the mechanics interviewed said that they were frequently asked by motorists to set up their car to pass the test without making meaningful repairs.

Twenty-six percent of motorists who had failed the test said that after having their car pass the retest, they went back to their mechanic and the car readjusted back to its initial state.

This is another problem with the clean-for-a-day problem. People are setting up their cars to pass a test 1 day every 2 years, regardless of whether the program is centralized or decentralized, and EPA's audits did not encompass this problem.

EPA's tampering survey data was analyzed by Doug Lawson, who is, unfortunately, not here to present it, but the results of that data analysis indicate that the most important factor is determining tampering rates are not I/M program type, but are more a function of age, technology and mileage. There is really very little difference between centralized and decentralized programs as far as tampering rates once you normalize the fleets for the different mileage and different ages.

Finally, we looked at on-road measurements of vehicles, of the kind that were just discussed by the previous panel, and we have on-road measurements of the kind that Drs. Kittelson and Scherrer did for both Arizona and Minnesota, and they showed no benefit in CO emissions from the I/M program. We have remote sensing data that indicates that cars that were recently inspected have emissions that are no different from cars that haven't been inspected for a long time. This is true for both centralized and decentralized programs.

So, overall, the on-road data indicate that whether a program is centralized or decentralized, I/M programs have not been particularly effective in reducing the on-road emissions of vehicles. From this, we concluded that the 50 percent discount does not have an empirical or scientific basis.

EPA responded to my paper and there were a lot of points that EPA made, but I'd just like to go through a couple of them right now. First of all, EPA said in their response, "EPA places far greater weight on measurements of vehicle emissions than on tampering and audit data." First of all, I need to point out that when we asked EPA to send us their data in support of the 50 percent discount, what they sent us were tampering and audit data.

Second of all, when EPA released its I/M rule in November of 1992, the only major I/M policy document that EPA had put out on the centralized/decentralized issue was a 1991 document entitled "I/M Network Type Effect on Emission Reductions Cost and Convenience." This document discusses EPA's audits and surveys and does not discuss vehicle emissions data.

So I think the record shows that, in fact, EPA did place weight, greater weight on its audits and surveys and it did not place weight on actual emission data when it developed the 50 percent discount.

I was going to go through a more recent issue that EPA raised, but we can maybe go through that in the question.

Mr. BARTON. Well, if you'll do it, can you do it in a minute?

Mr. SCHWARTZ. Yes.

Mr. BARTON. You've waited 2 hours to testify. We can give you an extra 1 or 2 minutes.

Mr. SCHWARTZ. Okay. More recently, in fact, within the last couple of months, EPA presented some emission data in support of its 50 percent discount. I want to point out that this data was not available when EPA first developed the discount, but since EPA has presented it now, it's important to deal with it. EPA compared IM240 emissions from cars arriving at a centralized test line for their regular test in Arizona with emissions from cars in California solicited by mail, with a promise of free repairs and a free rental car.

EPA, when comparing this data, found that the hydrocarbon and carbon monoxide emissions from the Arizona cars were much lower than the California cars and thereby concluded that centralized programs work and decentralized programs don't. I think there are a number of problems with making this kind of comparison for determining I/M effectiveness.

First of all, there is an obvious recruitment bias. The Arizona cars were solicited as they arrived for their scheduled test, and, as I just told you, the Arizona Auditor General found that people prepare for their test. Cars are cleaner at the test than they are on the road in Arizona.

On the other hand, in the California El Monte study, the cars were solicited by mail, with a promise of free repairs. This was probably an inducement for people to bring in their broken cars to have them repaired for free, and so those cars are most likely more highly emitting than the average car on the road in California.

To try and get around this, to some extent, I looked at the Sacramento data from our pilot study, where we had IM240's of cars. Those cars were just recruited by mail for testing, but there was no promise of repairs and no repairs were involved. So we think that's probably a little more representative of cars on the road, but we can't be sure because only 50 percent of the people brought in their cars.

In any case, if you compare the Sacramento data to the Arizona data, you find that both places have about the same CO emissions. Arizona has higher HC emissions and Arizona has lower HC emissions and California has lower NO_x emissions.

If you were to use EPA's procedure for discounting, you would have to say that there should be no discount for carbon monoxide, there should be a discount for decentralized programs for hydrocarbons and there should be a discount for centralized programs for NO_x. I'm not advocating that we should do that. I don't think this is a very good way to determine I/M effectiveness.

The way to determine I/M effectiveness is the kinds of studies that the previous panel talked about, where we look within a city and we ask the question are the cars that have been through I/M any cleaner than the cars that haven't. That cancels out all the other effects that could be very different between cities in terms of socioeconomics, weather, vehicle maintenance behavior, vehicle miles travelled, and so on.

Those are the kinds of studies that will tell us whether the I/M program is actually impacting emissions, not looking at one city and saying, well, its emissions are higher; therefore, that program is not working compared to another program.

[The prepared statement and attachments of Joel Schwartz follow:]

STATEMENT OF JOEL SCHWARTZ, CALIFORNIA INSPECTION AND MAINTENANCE REVIEW COMMITTEE STAFF

PART ONE—SUMMARY OF "AN ANALYSIS OF USEPA'S 50-PERCENT DISCOUNT FOR DECENTRALIZED I/M PROGRAMS"

One of the major areas of contention in the vehicle inspection and maintenance (I/M) debate between the state of California and the United States Environmental Protection Agency (USEPA) is the USEPA's 50-percent discount for decentralized I/M programs, relative to centralized programs. The staff of the California Inspection and Maintenance Review Committee has evaluated the scientific basis for the USEPA's 50-percent discount by evaluating the USEPA's audits and tampering surveys of I/M programs, as well as other researchers' studies of on-road vehicle emissions. We have reached the following conclusions:

Direct measurements of the variables that I/M is supposed to reduce—emission system tampering and tailpipe emission levels—show little difference between centralized and decentralized I/M programs, and also little or no effect due to current I/M programs. We conclude that whether an I/M program is centralized or decentralized has not been an important factor in determining I/M program effectiveness.

The USEPA's audits are not suitable for evaluating I/M programs on two accounts. First, the audits were performed using statistically invalid research designs. Second, since direct measurements of emissions and tampering from on-road vehicles show little or no difference between centralized and decentralized I/M programs, we conclude that the USEPA's audits, at best, evaluate only a subset of the variables affecting I/M performance. Combining these results, staff concludes that there is no empirical or scientific basis for a discount for decentralized I/M programs relative to centralized I/M programs.

The following is a summary of our findings for each step in our analysis.

On-road and ambient measurements of vehicle emissions indicate that both centralized and decentralized I/M programs have performed poorly

Trends in ambient ozone and CO levels between 1983 and 1992 show that, on average, regions with decentralized I/M and regions with centralized I/M had about the same reduction in the two pollutants (Manhard, 1994; USEPA, 1993c).

On-road pull-over and on-road remote-sensing studies show that, in both centralized and decentralized I/M programs, there is little or no correlation between vehicle emissions and time since the last I/M test. In other words, cars that recently had an inspection had similar emissions to cars that hadn't had an inspection in a long time (Lawson, 1990, 1992, 1993 Stedman, et al., 1991).

Similar studies indicate that cars not subject to an I/M program (i.e., cars registered in nearby non-I/M counties) had emissions similar to the emissions from cars that were subject to I/M (Zhang, 1994; Radian, 1992; Ostop and Ryder, 1989).

A study of ambient CO levels in Minnesota's annual centralized I/M program showed that 2.5 years after implementation of the I/M program, CO levels declined an additional 1.4 percent over the decline that would have been expected based on the pre-I/M trend (Scherrer and Kittelson, 1994). USEPA's model predicted about a 25 percent reduction in CO due to the I/M program.

A study of ambient CO levels in Arizona's I/M program concluded that Arizona's I/M program was not reducing CO emissions (Arizona Auditor General, 1988).

USEPA's tampering surveys show little difference in tampering rates between centralized and decentralized I/M programs

Centralized programs had slightly lower tampering rates than decentralized programs (see Figure 1). However, the small advantage for centralized programs may be due to selection bias. In centralized programs, more than two thirds of tampering survey inspections were performed on cars as they pulled into centralized test lanes, while in decentralized programs, cars were pulled over at random on the road. Evidence indicates that motorists are less likely to bring a tampered car to the emission test than they are to drive a tampered car on the road (Walsh, et al., 1994).

I/M programs are supposed to reduce on-road emissions and tampering. However, real-world data on vehicle emissions and tampering do not show a difference between centralized and decentralized I/M programs.

According to USEPA I/M policy documents published in 1991 and 1993,[1] USEPA bases its 50-percent discount, not on measurements of vehicle emissions, but on its audits and tampering surveys of I/M programs. In particular, USEPA places great weight on its covert audits of improper testing rates in I/M programs. In these audits, USEPA set up cars to fail the visual test (by removing catalytic converters for instance), and then covertly took the cars for an inspection. In some cases the cars were set up to fail the emission test as well. When we looked at the audit data, we found a number of methodological and other data problems.

USEPA analyzed data that included errors in favor of centralized I/M programs

USEPA's two I/M policy documents sometimes do not reflect the actual results obtained by USEPA in its original audits. For example:

USEPA reports zero-percent improper test rates for both visual and emissions testing in Maryland's centralized program. However, USEPA's Maryland covert audit found an overall 40 percent improper test rate (MD1991a, MD1991b, MD1991c).

USEPA reports a 50 percent improper visual test rate in New Jersey's centralized I/M program. Its audit of New Jersey's program actually found a 66 percent improper test rate (NJI991).

USEPA reports a 46 percent improper emission test rate for New Yorks decentralized program. However, USEPA's New York audit found a 37 percent improper emission test rate (NY1990).

USEPA's audits included structural biases against decentralized I/M programs

USEPA cites Arizona's centralized I/M program as having a low rate of improper testing based on its Arizona covert audit. However, in its audit of Arizona's program, USEPA sent a single car to nine different test stations (AZ 1991). When a car fails in Arizona's I/M program, future tests of that car are marked on the Arizona I/M computer network as retests. Every inspector after the first one that failed the car would know that the car had previously been tested and had failed. Since inspectors knew they were testing a car that previously failed, USEPA gave Arizona's I/M program an easier test than it gave to decentralized programs.

USEPA states that it used "subtle deception" in the way it tampered the car used in its covert audit of Georgia's decentralized I/M program. USEPA replaced the car's catalytic converter with something that looked a bit like a catalytic converter. However, in covert audits of centralized I/M programs, USEPA removed the catalytic converters from covert cars and replaced them with straight pipes. In other words, USEPA gave Georgia's decentralized program a tougher test than it gave centralized I/M programs (GA1989).

In its audit of Missouri's decentralized I/M program, USEPA targeted stations for covert audits based on expectation of poor performance, rather than at random. This would unfairly increase the rate of improper testing observed in the audits relative to the actual improper testing rate in the program (MO1993).

The USEPA's audit data contain a number of methodological biases and idiosyncrasies. Biases in the conduct of the audits make the quantitative results of the audits unreliable. Idiosyncrasies in the methodologies between audits of different I/M programs make the data unsuitable for inter-program comparisons. Finally, spotty

[1] "I/M Network Type: Effects on Emission Reductions, Cost, and Convenience," (USEPA, 1991), and "Quantitative Assessments of Test-Only and Test-and-Repair I/M Programs," (USEPA, 1993).

documentation of the audit methods and results makes it difficult to systematically assess the meaning of the audit data.

USEPA assumes, but does not demonstrate, that its audit measures reflect on-road emission reductions:

USEPA asserts, but does not demonstrate, that the variables it measured relate directly to the effectiveness of I/M programs in reducing on-road emissions. However, USEPA does not present data or analyses that show a relationship between its audit measurements and on-road emission reduction performance of an I/M program.

USEPA considers only a subset of the variables that affect I/M effectiveness:

USEPA overlooks feedbacks that occur when different portions of a program are changed. For instance, if improper testing is curtailed, then motorists might be more likely to seek waivers. If program officials clamp down on waivers, motorists might look for mechanics who can superficially adjust cars to pass the test without fixing defects that might cause high emissions between tests. Motorists might also be more likely to register their cars in non-I/M counties, or not register their cars at all.

USEPA does not present a methodology for converting the audit data into a discount: The USEPA presents no mathematical or statistical analysis that starts with its audit data and ends with a 50-percent discount. The USEPA presents numerical data on the audit variables, and then makes a number of statements about what variables it believes are important in determining I/M effectiveness. But the path from there to the 50-percent discount (and its numerical precision), or any other posited discount, is left uncharted.

PART TWO—SUMMARY OF I/M REVIEW COMMITTEE STAFF'S REBUTTAL TO USEPA'S RESPONSE TO "AN ANALYSIS OF THE USEPA'S 50-PERCENT DISCOUNT FOR DECENTRALIZED I/M PROGRAMS"

In responding to our Report, USEPA raises a number of major issues. We review and respond to some of these issues below. We paraphrase USEPA for brevity. Our complete response to USEPA includes the full text of USEPA's response to our Report.

USEPA States that it Relied on Measurements of Vehicle Emissions in Developing its 50-Percent Discount

USEPA: USEPA now states that its audits and tampering surveys played a minor role in its development of its 50-percent discount.

Reply: When we first requested USEPA's data and analysis in support of its 50-percent discount late in 1994, USEPA sent us two papers: "I/M Network Type: Effects on Emission Reductions, Cost, and Convenience," (USEPA, 1991), and "Quantitative Assessments of Test-Only and Test-and-Repair I/M Programs," (USEPA, 1993). Until 1995, these were the two main USEPA I/M policy and analysis documents. Both of these documents focus almost exclusively on USEPA's audits and tampering surveys, and do not contain on-road emission data from vehicles. The second document was published one year after USEPA promulgated its I/M rule (Federal Register, November 5, 1992).

USEPA Claims that Phoenix/El Monte Comparison Proves 50-Percent Discount

USEPA: Cars arriving for their scheduled I/M inspection in Phoenix, Arizona are lower emitting on IM240 than cars solicited by an offer of free repairs in El Monte, California. This proves that Arizona's centralized I/M program is more effective than California's decentralized I/M program. Therefore, a discount for decentralized I/M programs is appropriate. USEPA recently discussed this result in its "I/M Briefing Book" (USEPA, February, 1995).

Reply: We first note that these data did not exist when USEPA first developed its 50-percent discount in its November, 1992 I/M Rule.

Arizona and California IM240 Data Contain Selection Biases

When USEPA discusses its Arizona/California comparison (see I/M Briefing Book, page 23) it claims that the cars were recruited at random in California and says nothing about recruitment of the Arizona cars. It is important to note that the Arizona cars were solicited as they arrived for their scheduled I/M test. A number of studies have shown that cars are cleaner at their I/M test than they are on the road. In particular, a survey by the Arizona Auditor General found that 88 percent of mechanics say they are frequently asked by customers to set up cars to pass the I/M

test without performing meaningful repairs. Furthermore, 26 percent of motorists who failed their initial test said that they had their car readjusted back to its original state after passing the retest.

On the other hand, the cars in El Monte California were recruited by mail solicitation with a promise of free repairs and a free rental car for cars that failed the test. The letters also stated that the testing process would take four hours. Ultimately, 61 percent of solicited motorists brought in their cars. This recruitment method encourages people with broken cars to bring in their cars (free repairs) and discourages motorists who know their car is well maintained from bringing in their cars (four hours waiting while car is tested). Thus, the El Monte sample most likely includes more high emitters than the on-road fleet.

A recent study in Sacramento collected IM4240 test data on about 3000 post-1980 cars. Motorists were solicited by mail to bring their car to one of three IM240 test lanes in Sacramento County. No inducements were offered and the testing process took less than half an hour. About 50 percent of solicited motorists brought in their cars. Because there were not inducement to bring in poorly maintained cars, this sample may be more representative of the on-road fleet in California.

In Figures 4, 5, and 6 we compare emissions from the El Monte, Sacramento, and Phoenix cars. As the graphs show, Sacramento and Phoenix cars have about the same CO emissions, Sacramento has lower NO_x emissions, and Phoenix has lower HC emissions. Note that the Phoenix sample likely has lower emissions than the actual Phoenix on-road fleet due to recruitment at the test lane.

Table 1 compares the overall average emissions from the Sacramento and Phoenix cars (the Sacramento was normalized to the Phoenix model year distribution to take the overall average). Note that after correcting for the difference in new car certification standards between the two cities, Phoenix is still lower emitting for HC, Sacramento has lower CO emissions, and the two cities have the same NO_x emissions.

Table 1

Comparison of Vehicle IM240 Emissions in Phoenix and Sacramento

	Sacramento		Phoenix		Sacramento - Phoenix	
	Emissions	Emissions Above Cert. Std..	Emissions	Emissions Above Cert. Std.	Difference in Total Emissions	Difference in Emissions Above Cert Std.
HC	0.55	0.14	0.41	0.00	0.14	0.14
CO	7.16	0.16	7.11	3.71	0.05	-3.55
NOx	0.97	0.27	1.24	0.24	-0.27	0.03

Thus, if we were to follow USEPA's methodology, we would discount centralized programs for NO_x, decentralized programs for HC and would consider both programs equal on CO.

Even though we have shown that USEPA's assertion that Arizona cars are uniformly cleaner than California cars is incorrect, the larger issue concerns whether such comparisons are relevant to an assessment of I/M effectiveness. A great many factors could account for differences in the emissions of cars in different regions. For example:

Studies of driving behavior have shown that drivers in Phoenix put their cars under high loads less often and drive at slower speeds than drivers in California.[2] Thus, cars in Phoenix might not be subjected to as many stresses that could cause deterioration as are cars in Sacramento.

The populace of the two cities may differ in their vehicle maintenance behavior.

Phoenix has a substantial population of retirees who spend only part of the year there. This could mean that cars in Phoenix are driven fewer miles per year, on average, than cars in California. Lower mileage cars are lower

[2] Personal communication with Elizabeth Deakin, Professor of Transportation and Urban Planning, UC Berkeley, March 17, 1995.

emitting on average than higher mileage cars. USEPA did not provide data on the mileage of the cars in its Phoenix sample.

In the mid and late 1980's, Arizona was under threat of federal sanctions and citizens lawsuits for not attaining federal health standards. As a result, USEPA maintained a substantial presence in Arizona when compared to other states.[3] Greater USEPA scrutiny could have resulted in Arizona making greater efforts to reduce vehicle pollution than other states.

There may be many other demographic, meteorological or other differences that could affect vehicle emissions. USEPA defines all differences to be due to I/M network type. However, a proper scientific analysis requires accounting for more of the factors that could cause differences in the emissions of vehicles. This is a very difficult task. A better way to determine I/M effectiveness is presented below.

Measuring I/M Effectiveness with On-Road Emission Measurements

On-road and ambient data presented in the Report show that both centralized and decentralized I/M programs have had little or no effect on on-road vehicle emissions. The studies we summarize in the Report used three approaches to determining I/M effectiveness:

1. Measure ambient pollution levels before and after an I/M program is implemented. Researches who have done this in Arizona and Minnesota have found little or no effect due to I/M.
2. Measure emissions of vehicles on the road. Look at the emissions of cars that were recently inspected and cars that are were approaching their next inspection. If I/M is effective, the recently inspected cars should have lower emissions. Studies that have checked for this in California and Chicago have found no difference in vehicle emissions based on time since the last inspection.
3. Measure emissions of vehicles on the road. Compare the emissions from cars that are in the local I/M program and cars from nearby regions that are not in the I/M program. If I/M is effective, the cars from the I/M region should have lower emissions. A study that did this in Arizona found no difference between I/M and non-I/M cars (Stedman, et al., 1994). One study in Colorado found no difference between the hydrocarbon emissions of I/M and non-I/M cars (Ostop and Ryder, 1989). Another study found the same result for carbon monoxide emissions (Radian, 1992), while the first found the I/M cars to be 13 percent lower in emissions than the non-I/M cars. USEPA modeling predicted a 24 percent reduction in CO due to the I/M program.[4]

An advantage of these measurement techniques is that they reduce or eliminate the impact of other variables that could affect vehicle emissions, such as driving behavior, vehicle maintenance behavior, wealth, weather, attitudes towards environmental regulations, etc. By removing these other variables, we can be more certain that any variation in emissions that we measure is an effect of the I/M program alone. A further advantage of the studies we cite is that they are much less likely to include selection biases, because cars are measured at random on the road.

In contrast, USEPA's comparison of cars in different cities includes the effect on vehicle emissions of all of the differences between those cities, and not just the effect of I/M. USEPA's technique includes no reference that allows one to determine to what extent differences in measured emissions are due to differences in I/M programs or are instead due to the numerous other possible factors delineated above. Furthermore, USEPA's approach includes selection bias in that cars are solicited as they arrive for their scheduled I/M test.

USEPA Criticizes Remote Sensing

USEPA: USEPA has stated that there is "no scientific basis" for believing that remote sensing can be used to measure fleet average emissions or to find high emitting vehicles.

Reply: USEPA's contention is contradicted by a number of remote sensing studies (many of them published in peer-reviewed scientific journals). USEPA itself published a study (Glover and Clemmens, 1991) that found that remote sensing had "reasonably good agreement" with IM240 test results for estimates of fleet emissions. Other studies, and our Report present data showing similar results.

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[3] Ibid.

[4] Personal communication by Donald Wolcott USEPA, to Donald Stedman, University of Denver.

When compared with IM240, remote sensing accurately fails many high emitters without falsely failing many low emitters. For example, Figure 4 shows the results of a study comparing RSD with IM240 in Michigan. The data set contains 119 post-1980 vehicles that were measured by RSD and also tested on I/M240 at the roadside.[5] For HC emissions, using an IM240 cutpoint of 0.8 grams per mile, and "failing" the highest emitting 15 percent on the RSD, RSD captures 65 percent of the excess emissions (i.e., emissions above the IM240 cutpoint) with an error of commission rate of 0.8 percent (1 false failure in 119 vehicles). In addition, if the lowest emitting 25 percent of these vehicles were to be excused from a scheduled inspection based on the RSD readings, only 2.9 of the total excess emissions would be forgone. Clearly, remote sensing has the potential to find the cars that contribute most of the repairable emissions.

In summary, after reviewing and responding to USEPA's comments, we still find that I/M network type has not been a determining factor in I/M effectiveness. Both centralized and decentralized I/M programs have had little or no effect on on-road vehicle emissions.

[5] One—third of the cars were measured once by RSD, one-third were measured twice, 15 percent were measured 3 times, and the remaining 20 percent were measured between 3 and 10 times.

Figure 1

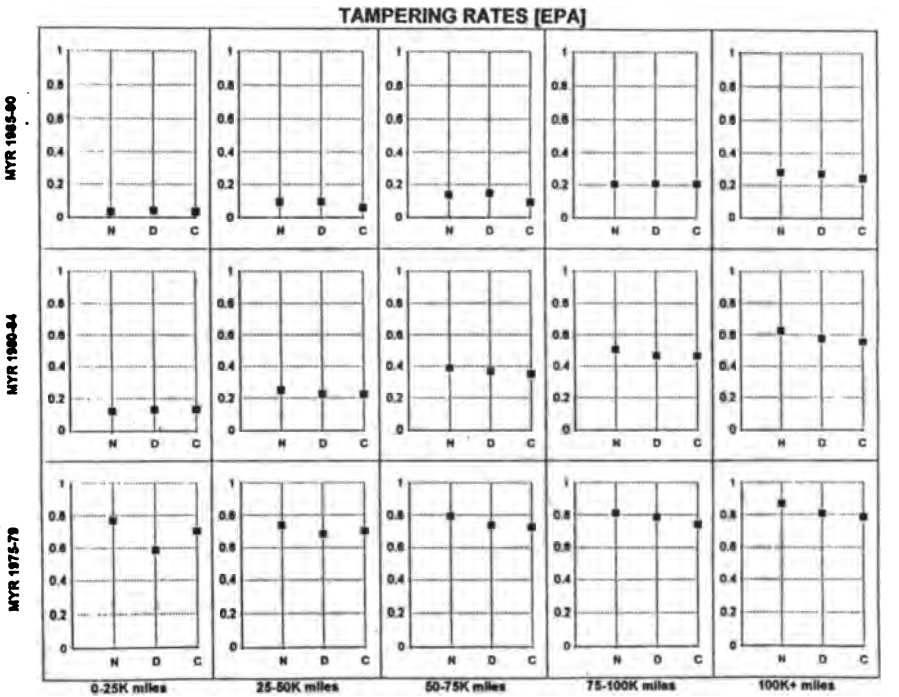
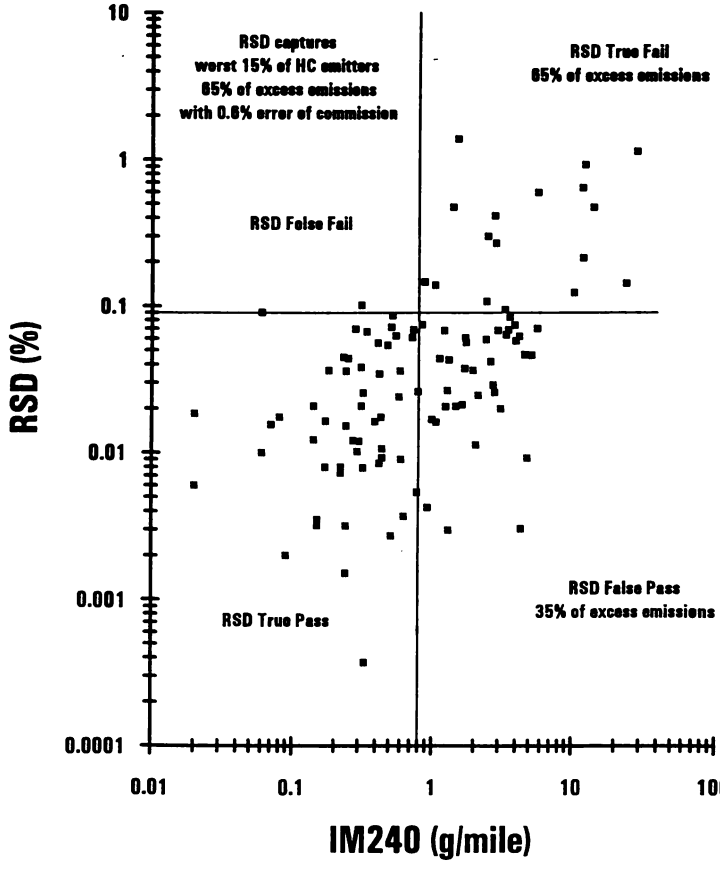


Figure 1 summarises data from national tampering surveys. On each of the 15 graphs in the figure, the vertical axis gives the tampering rate measured. The horizontal axis gives the I/M program type (N = no program, D = decentralised, C = centralised). The outer vertical axis divides rows by model year range. The outer horizontal axis divides columns by odometer mileage range. Thus, looking across the top row gives tampering rates for 1985–1990 model year cars as mileage increases. Looking down the middle column gives tampering rates for 50,000 to 75,000 mile cars over the three model year ranges. Note that the differences in tampering rates with model year or odometer mileage for any type of I/M program are much greater than the differences between types of I/M programs.

Figure 4

RSD and IM240 compared for vehicles measured on the road



Data supplied by Bob Stephens, GM Research

Figure 5

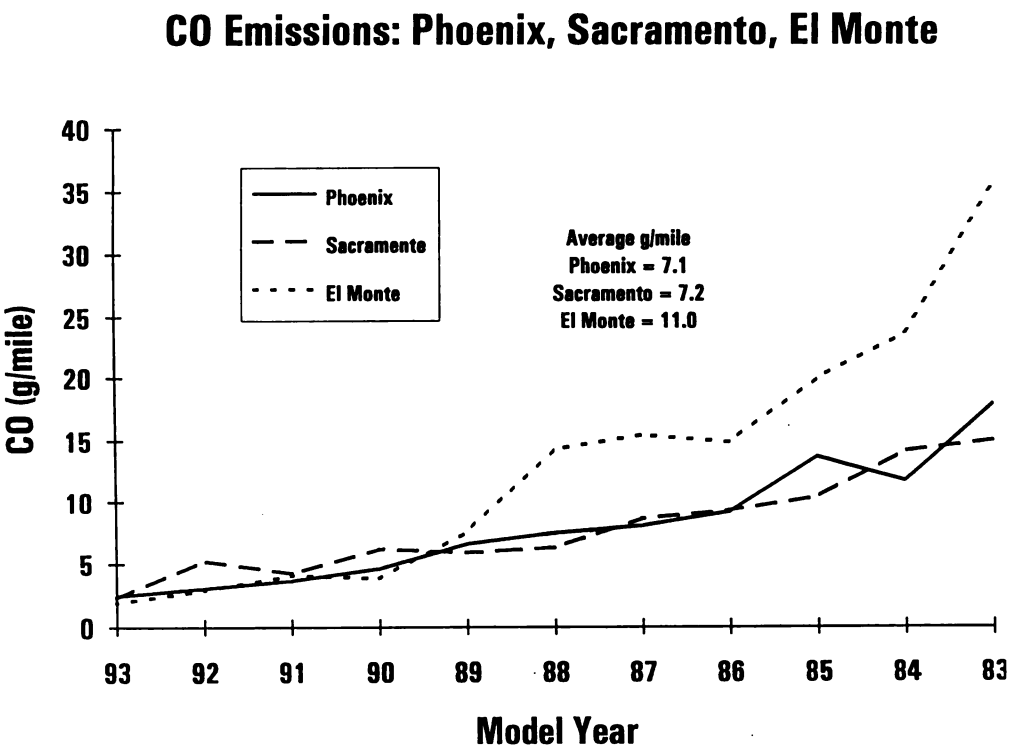


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Figure 6

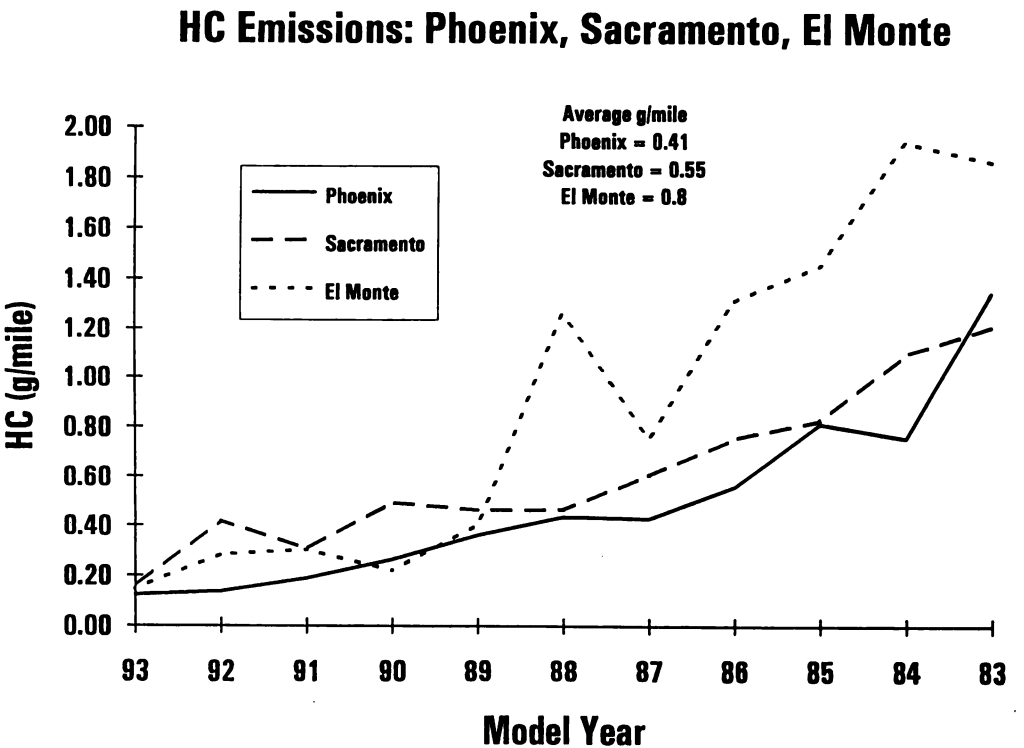
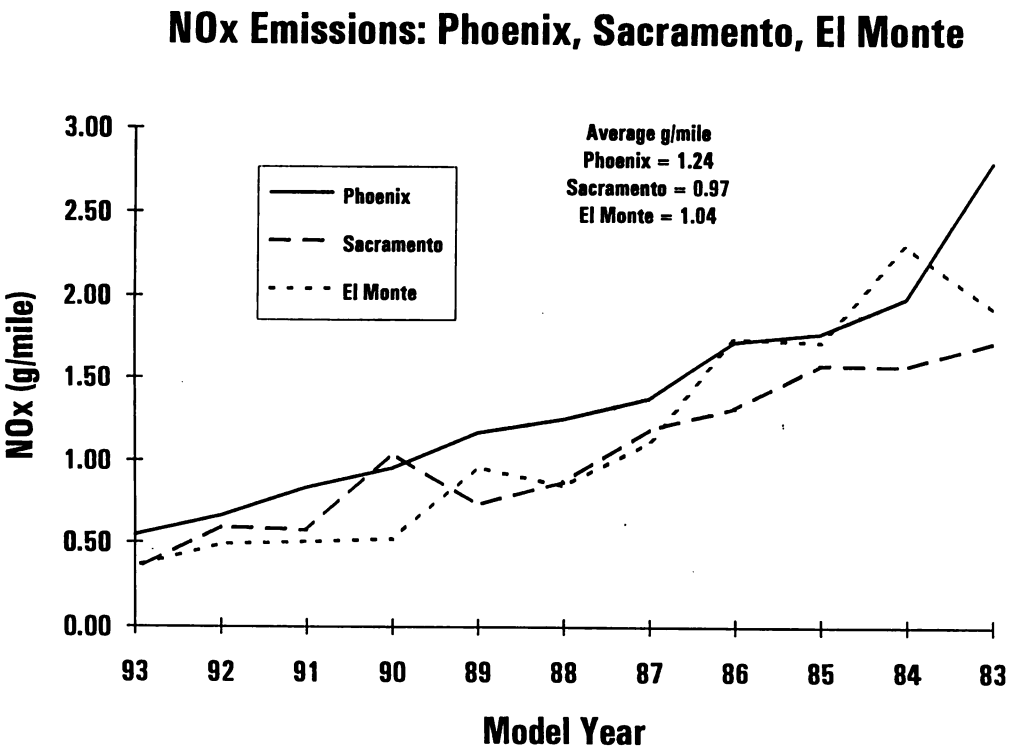


Figure 7



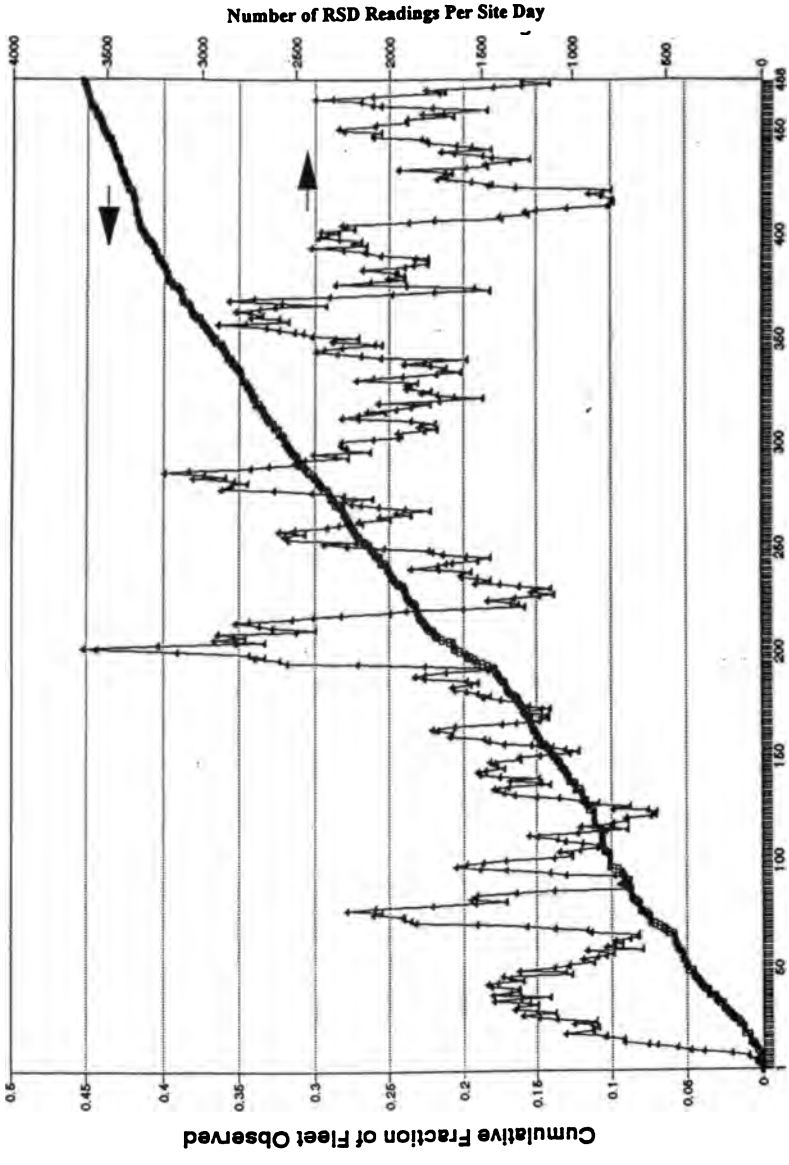


Figure 5-18. RSD Pilot Program Trends for Vehicle Observations

Mr. BARTON. Thank you. Ms. Scarlett, how long has the California Inspection and Maintenance Review Committee been established?

Ms. SCARLETT. There have been several California Inspection and Maintenance Review Committees. The one that I currently chair has been in place for just about a year now, close to a year, maybe 10 months.

Mr. BARTON. And what is the mission of the committee that you're chairperson of?

Ms. SCARLETT. The initial mission of the committee is to, in fact, evaluate these two pilot studies that have been alluded to, the one in Sacramento on remote sensing and the other in El Monte, in which we compared IM240 equipment type, its ability to identify high emitting vehicles, and then result in subsequent repairs, with other equipment test type, ASM at 25, 20, 5 and 50/15.

Mr. BARTON. And what has led your committee to question some of the assumptions of the EPA program with regard to credits for centralized testing versus the 50 percent credit for decentralized testing? Why have you not just accepted that as an article of faith that they know what they're talking about?

Ms. SCARLETT. There are a number of factors that led us to investigate that issue. Number one, of course, from a programmatic standpoint, because we're required to show equivalence with this model, we always had a concern that, off the top, you were going to be discounted by 50 percent if you had some decentralized component.

And the California State Legislature, in its legislation, had preferred that we maintain some kind of decentralized component. So we already had a concern. But what prompted us to look at it from an empirical standpoint was, number one, as we began to review the results of the El Monte project, in which we were looking at comparison of IM240 equipment with ASM equipment, the former of which is more associated with centralized test-only, the latter of which, because it's a little less expensive, might be usable in a decentralized situation, it did not appear that there were significant differences between the abilities of those two kinds of tests to accurately identify high emitters and result in effective repairs. That was one little bee in our bonnet that we might want to revisit this question.

Second, however, we had reviewed, in preparation for this committee assembling, we reviewed a number of documents, such as the U.S. EPA's documents—two in particular, one 1991 document, one 1993 document—in which it gives its justification for the 50 percent discount. In reviewing those documents, we did not find that the data either were well presented and/or that the argumentation from point A to point B was well established.

We consequently asked Joel Schwartz to go back to the original data and go back through that and that's what he has done and what he has found.

Mr. BARTON. Now, you stated in your testimony that there is no empirical evidence to justify this 50 percent discount. To either of your knowledge, is there any empirical data that anyone else has come forward with that would justify the 50 percent discount for the decentralized test system?

Ms. SCARLETT. I'm going to defer to Joel to embellish my answer, but I should say this is a moving target, of course, and we are in constant dialogue with EPA on this matter. We reviewed their audit data and their tampering survey data. We did not view those data as adequately justifying those discounts.

They have responded to us with additional ambient air data, comparing, as Joel alluded to, California with Arizona. We are now reviewing those data. So this is sort of a moving target. To date, we are not satisfied that there is a justification for that discount. Indeed, at this point, we're not satisfied that there's a justification for any discount, let alone the 50 percent.

Mr. BARTON. Do you want to elaborate on that?

Mr. SCHWARTZ. Well, I think the answer is that in all the times that we've looked and the way people have looked, either by ambient air measurements before the program started and after it started, or by looking by either remote sensing or roadside pullovers of cars that were recently tested versus cars that were about to be tested, or by looking with remote sensing at cars that are in an area that's in the I/M program and cars in a nearby region that are not in the I/M program, in every case looking at whether the cars that were in the I/M that went through their inspection had lower emissions than the cars that hadn't. And most of the time, the answer is no. There is no detectable effect due to the I/M program.

In a couple of cases, there has been a measurable effect, and, as Dr. Stedman pointed out, both of those cases happened to be decentralized programs.

Mr. BARTON. Ms. Scarlett, the EPA continues to claim that remote sensing fails too many cars. Has your committee looked at that problem?

Ms. SCARLETT. We are in the process of examining that question and specifically as it relates to the Sacramento data, which, I might add, has been mischaracterized and I would hope I'd have the opportunity to better characterize those data. At this point, for the Sacramento project, we have not completed our evaluation of the test's false failure rate, if you will.

I have to underscore that failure is a function of where you set the cutpoint. That is, just exactly what you decide is a failing car. The data that we have reviewed with respect to remote sensing suggests that when you are among the vehicles generally characterized as high emitting, there is a low false failure rate. And I would defer to Joel to embellish that.

Mr. SCHWARTZ. I think the issue here is that the Sacramento study was not intended to look at the accuracy of remote sensors relative to IM240. If it was, we would have had to pull over cars and measure them with a remote sensor and give them an IM240 right away, because over the 3-month period that separated the remote sensing measurements and the IM240 measurements, the cars changed.

So when we see differences between the remote sensor and the IM240, what we're seeing is differences in the cars, not differences—not a problem with the remote sensor. A number of researchers have done studies where they've pulled over cars and measured by remote sensing and given them an IM240 and, in fact, the agreement is quite good. If you decide that you're going to fail,

say, the highest 10 percent emitters with the remote sensor, then you find that your false failure rate is extremely low, and because the emissions are so skewed towards the worst 10 percent, that you capture a lot of the repairable emissions with the remote sensor.

Now, that's not to say that in a real program, if we're going to call people in 2 or 3 weeks after their remote sensing measurement, it's quite possible that the car has changed. Broken cars are more variable, and that's an issue we have to deal with.

But the characterization that when a remote sensor makes a measurement it's not accurate is incorrect.

Mr. BARTON. My time has expired. I will recognize the gentleman from Oregon.

Mr. WYDEN. Thank you. Ms. Scarlett, you discuss in your testimony the two pilot studies. One important finding was that identification of high emitting vehicles does not vary significantly by test type. Could you all provide the analysis supporting this conclusion to this subcommittee by the end of the week?

Ms. SCARLETT. We would certainly be happy to do that. The data are still under evaluation and those are our preliminary results. The actual published report with that information it is not complete. I would be happy to provide you the preliminary, sort of ongoing data that confirm what I said.

Mr. WYDEN. Could you give us the preliminary data? Because, again, we're interested because you all seem to make a conclusion there. It states, "Identification of high emitting vehicles does not vary significantly by test type." And, yet, every time we ask about the science, we heard this earlier, everybody says, well, the data is kind of preliminary, the science is early.

Could you give us what you have so that we can——

Ms. SCARLETT. We would be happy to give you what we have.

Mr. WYDEN. We'd like to assess the way you all arrive at those conclusions. Do you conclude that remote sensing devices are equally as effective in identifying high emitting cars on an individual basis as IM240?

Mr. SCHWARTZ. I think the answer is no. The IM240 is a much more thorough test of the car. I think the advantage of remote sensing is that it gets around the human behavior problem. People prepare for their scheduled test. People can't prepare for a remote sensor.

The problem in I/M programs is that people have an incentive to get a certificate that says I pass the test once every 2 years. Putting remote sensors on the road and following through to ensure people repair their cars once spotted by the remote sensor can give motorists an incentive to have a clean car on the road, not just a car that's clean once every 2 years.

Mr. BARTON. Would the gentleman yield on that?

Mr. WYDEN. Sure.

Mr. BARTON. What is the probability of correctly identifying a polluter with remote sensing? We've established it's not as effective. Is it 90 percent as effective, 95 percent, or only 10 percent?

Mr. SCHWARTZ. There have been three studies that were done where cars were pulled over with a remote sensor and then given an IM240. I have the data from one of them in front of me. It's also in my testimony. I used EPA's cutpoint of .8 grams per mile on the

IM240 as the failure cutpoint and I took the worst 15 percent of hydrocarbon emitters on the RSD. The RSD captured 65 percent of the excess emissions above the IM240 cutpoint, with 1 false failure out of 119 cars.

Mr. BARTON. One out of 119.

Mr. SCHWARTZ. Now, that's not the definitive result. It just shows you that the remote sensor is going to be able to pick out the very high polluters without failing too many cars that are low emitters.

Mr. BARTON. Is it safe to say it's good enough for government work?

Mr. SCHWARTZ. I would leave that to the government to decide.

Mr. BARTON. I yield back.

Mr. WYDEN. I thought we were about the business of reinventing government rather than sticking to the old standards, but my friend and I are young enough that we can spend some time pushing higher standards rather than the old ones.

Let me ask you about this matter of human behavior, Mr. Schwartz. Now, you, it seems to me, in response to the chairman, made the argument that remote sensing helps deal with the problem of human behavior that I gather you feel traditional I/M doesn't. Now, we noted that during the 10-week test, less than half the vehicles passed through a remote sensing device, which seems to me that it sure looks like you can game this one well.

What is the backup you have on this point, that remote sensing is better able to deal with the vagaries of human behavior?

Mr. SCHWARTZ. First of all, let me point out that as far as I know, no one has yet conducted an I/M program that has been effective at reducing emissions. And so the kinds of programs we've had have not been effective in dealing with human behavior and I've presented some of the reasons why.

Mr. WYDEN. Let me make sure. So it has not been effective yet in terms of dealing with human behavior.

Mr. SCHWARTZ. No, no. I'm talking about the current I/M programs that exist.

Mr. WYDEN. I'm sorry.

Mr. SCHWARTZ. Because they're not achieving emission reductions, even though they're testing a lot of cars. We don't know because no one has ever done this before. We hope that by putting remote sensors on the road, we can give people an incentive to have a clean car on the road rather than just a clean car once every 2 years.

You brought up the Sacramento study, where about half the cars in the Sacramento fleet were measured in a 2-month period. That was essentially 488 days of having one remote sensor on the road. That was the equivalent amount of effort. So 488 days of remote sensing captured 50 percent of the fleet and the rate of coverage of the fleet was increasing linearly with measurements at the point that we stopped.

So this is just a 2-month period where we covered half the fleet. That's not a canonical number for remote sensing. It just means that if we had kept on going, we would have captured more of the fleet.

Mr. WYDEN. Let me see if I can get one other one in. Based on what you now know, Ms. Scarlett, what limitations, if any, do you see on the use of remote sensing devices based on the Sacramento pilot project?

Ms. SCARLETT. Number one, there is the limitation mentioned earlier with respect to NO_x emissions. Thus far, we have not utilized remote sensing well to identify NO_x emissions, which suggests that one does need some alternative vehicle measurement to obtain that information.

Second, because of the variability in emissions, and this is not a function of remote sensing, but of vehicles themselves, there are some programmatic problems with respect to remote sensing. If you do a read of a car one time and it's a gross emitter and you then immediately give that individual, say, a fine or a fix-it ticket, they go in and subsequently get measured with an IM240 or a Bar 90 or whatever it might be and that read shows the car on that day to be clean, you've got a consumer problem. They say you told me I was dirty, here I am and I'm actually clean.

We envision some of these programmatic issues as being problems that we're going to have to address in terms of introducing RSD.

Mr. BARTON. Thank you. The gentleman from North Carolina.

Mr. BURR. Thank you, Mr. Chairman. What I'm going to try to do is just take some of the comments, the statements that both of you have made, and I'm just going to ask you to clarify or expand on them. Ms. Scarlett, just a quick one. You started off by saying that over a half of those automobiles identified as low emitters after repair were worse than they were before they were "fixed". Can you just expand on that just a little bit for me?

Ms. SCARLETT. Yes. To clarify the terminology, the word I used was marginal emitters. These are cars that failed the test, but may have failed it only a little bit. And one of the phenomenon that we find here and in other data, as well—by here, I mean California's pilot project in El Monte—is that it's very difficult to repair those cars. Indeed, those cars that are just marginal emitters may not even really be broken, in a fundamental sense. And so what we observed was that after the cars were tested and then went through some kind of repair process, they actually had higher emissions than when they went in.

Now, partly, that can be a function of repairing the car which may have been a slight emitter, let's say, for NO_x and, in so doing, you actually make it a high emitter in one of the other pollutants. You get this tradeoff. As you repair to one emission, you may affect other emissions.

Mr. BURR. Could you conclude from that that there still needs to be refinement in where we have set the standards for what we're trying to reach?

Ms. SCARLETT. Well, this is, of course, the fundamental question that we face and I think it is demonstrated by the information that Don Stedman put up here with his little cubes. Does one try to go after those cars that are clearly high emitting and clearly, if you will, broken or have some fundamental problems, that you have some anticipation that you're going to achieve significant reductions? Do you try to go after a broader spectrum of vehicles; albeit,

you're going to be so-called targeting a broader set of overall emissions, but perhaps with no real assurance that you're going to result in real reductions.

That's the challenge we face. I think you hit the nail on the head, yes.

Mr. BURR. Now, you suggested, also, that personal motivation to routine maintenance is needed; that that's an important ingredient. Why?

Ms. SCARLETT. Well, this is simply another way of saying all of the things that Don Stedman and Joel Schwartz pointed to, which is that right now, when you have simply a certificate that you are obtaining, your motivation is to get that certificate for that day and you're off the hook for the next 1 or 2 years, as the case may be by State.

We think that it is important to have program components that somehow give citizens a motivation to be clean more than just that day and it is in this context that we think that RSD perhaps has a role to play. If you know that when you leave that repair station you have the prospect in 1 or 2 months of going down the road and getting hit by a remote sensor and getting a fix-it ticket or getting a fine for being a gross polluter, we think that gives one the incentive, as Mr. Kittelson suggested, to get the real fundamental repairs and not just the, gee, get me through the day situation.

Mr. BURR. I think Mr. Kittelson also suggested that we needed to concentrate on the atmosphere versus the process a little bit more. Is, in fact, what you're saying about the owner of that automobile, that we need to get them concentrating on the emissions more than the process?

Ms. SCARLETT. That's one way of characterizing it. Focusing on emission reductions rather than a certificate, yes.

Mr. BURR. Okay. I like your comment, Mr. Schwartz, clean for a day. I think that, in fact, from some of the testimony heard, that is, in fact, how many people look at it. If you would, could you expand upon the tampering rates? You raised that question. Was that a big problem, in your experience?

Mr. SCHWARTZ. Are you asking is tampering a problem?

Mr. BURR. Yes, sir.

Mr. SCHWARTZ. I think it's clearly a problem. Tampering rates vary a great deal from city to city. EPA's tampering data indicates that I/M programs, regardless of whether they're centralized or decentralized, have not had a major impact on tampering. Areas that have no I/M program have tampering rates that are higher, but only slightly higher.

Mr. BURR. Is it safe to conclude from that that any of the data that's out there, given that there is a high tampering rate, could be questionable as to the success or potential failure of any given program?

Mr. SCHWARTZ. You're asking could tampering be a measure of program success.

Mr. BURR. Yes. I've heard models, models, models, models. To create a good model, you have to first start with good information. Am I correct?

Mr. SCHWARTZ. Yes. Certainly higher tampering is correlated with higher emissions and that could be a way of determining suc-

cess, but it seems to me that it would be better to just go out and measure the emissions, which we can do, because why use a surrogate when you can measure the thing you want to measure directly.

Mr. BURR. You mentioned EPA one time and let me just ask a question and see how you would answer it. Is the EPA more concerned with audits and surveys than they are with emissions?

Mr. SCHWARTZ. I would not choose to speak for EPA. I will say that EPA's two main——

Mr. BURR. As somebody who has reviewed the process, would you agree?

Mr. SCHWARTZ. Yes. That was my impression from reading EPA's documents concerning I/M network type. They were concerned mostly with tampering surveys and audits of I/M programs and not with the on-road emissions of vehicles.

Mr. BURR. Thank you, Mr. Chairman.

Mr. BARTON. The gentleman's time has expired. The Chair now recognizes the distinguished gentleman from California, Mr. Waxman.

Mr. WAXMAN. Thank you, Mr. Chairman. Ms. Scarlett, I am concerned about the delay by California in reporting the results of the California pilot project to the public. Under the agreement between EPA and California, these results were required to have been publicly reported several months ago, but no report has been made. This suggests that there may be an effort underway to suppress unfavorable results.

To address this issue, I wrote Governor Wilson earlier this week, and, Mr. Chairman, I ask unanimous consent that a copy of my letter be inserted in the record.

Mr. BARTON. Without objection.

[The letter follows:]

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
March 21, 1995.

HON. PETE WILSON
Governor, State of California, State Capitol
Sacramento, CA 95814

DEAR GOVERNOR WILSON: I am writing to urge you to release without further delay the results of California's "pilot project" on automotive inspection and maintenance.

Information I have received indicates that the pilot project results are unpopular with certain special interests in California, but appear to have profound significance for the future of inspection and maintenance (I/M) in California and other states. In particular, the pilot project appears to demonstrate that there are serious inadequacies with remote sensing devices—a finding that would significantly bolster the case for test-only inspection stations.

The results of the pilot project are more than two months overdue. I hope you will agree that it is essential to release these results immediately.

BACKGROUND ON THE CALIFORNIA PILOT PROJECT

The California pilot project originated a year ago as part of the compromise agreement between the U.S. Environmental Protection Agency and your administration concerning the implementation of enhanced I/M programs in California.

This agreement set a "default" requirement that 30% of California vehicles be inspected each year in specialized test-only stations. The Federal EPA had wanted a highr percentage of vehicles to go to test-only stations, arguing that test-only stations were superior to traditional test-and-repair service stations because test-only stations have no financial interest in the outcome of the inspection. California serv-

ice stations, which did not want to lose testing business, and your Administration had wanted a lower percentage. One of the principal arguments against test-only inspections was that "remote sensing devices," which use infrared radiation to monitor emissions from moving vehicles, could be used as an effective alternative to test-only inspections.

The I/M compromise called for the nation's first comprehensive test of remote sensing devices (RSD's) to be conducted in Sacramento. During the pilot project, multiple vans mounted with RSD's conducted more than 500 van-days of RSD monitoring—enough testing to simulate the level of coverage that would be achieved annually by a full-scale program. A second part of the project, which collected data on the accuracy of the IM240 and Acceleration Stimulation Mode (ASM) I/M test procedures, represents the single largest source of information on the accuracy of these I/M test procedures.

The EPA-California agreement envisioned that the pilot program would be used to assess whether California could use RSD's as a substitute for test-only inspections.

APPARENT FINDINGS OF THE PILOT PROJECT

The results of the pilot project were required to be reported by December 31, 1994. However, there has been no public report of the results by your Administration.

The only public information about the pilot project that I am aware of was provided two weeks ago in a technical paper presented at the 16th North American Motor Vehicle Emissions Control Conference. A copy of this paper, by Tom Austin of Sierra Research, Inc., is enclosed.

The preliminary results are striking. If confirmed upon final analysis, they show grave deficiencies in the RSD program. These deficiencies include the following points:

- The RSD's had a very high "false failure" rate. Over half of the vehicles failed by the RSD's turned out not to have excessive emissions upon more thorough testing.
- The RSD's succeeded in identifying only a small fraction (10%) of the "excess emissions" that are identifiable by a good I/M program. By contrast, the inspections in test-only stations using the IM240 and ASM test procedures succeeded in identifying nearly all (over 90%) of the excess emissions.
- There was an "extremely poor" correlation between the emissions recorded by the RSD's and the actual level of emissions from the vehicles monitored by the RSD's.

SIGNIFICANCE OF THE FINDINGS

The pilot project has considerable significance for the future of I/M in California and elsewhere. For our State, the apparent failure of RSD means that we will probably have to rely on the use of test-only stations to meet the I/M performance standards spelled out in the agreement with U.S. EPA. This won't please the politically powerful California service stations, but nevertheless appears to offer the surest, most cost-effective path to cleaner air.

Nationwide, the U.S. EPA has been waiting for the results of the pilot project to determine what, if any, emission credits to assign to I/M programs that incorporate heavy use of RSD. In its most recent nationwide guidance on I/M, issued on February 27, 1995, EPA wrote:

> We are still waiting for California to complete its work and release its data analysis and conclusions on the large-scale Sacramento remote sensing study. . . . [W]e will forward remote sensing credits based on that study soon thereafter as an update.

The pilot project has also acquired considerable significance in Congress. A hearing by the House Commerce Committee's Subcommittee on Oversight and Investigations on I/M and remote sensing is being held on March 23 and 24. Several proponents of RSD's have been invited to testify, including Lynn Scarlett, the chair of the California I/M Review Committee. Some of these witnesses are expected to testify that test-only inspection stations should be abandoned in favor of RSD's.

Unfortunately, the Subcommittee Chairman, Representative Joe Barton, has refused a request to invite Tom Austin of Sierra Research to testify about the pilot project. Unless you act to release the project results, this action will effectively deny the Subcommittee information about the crucial deficiencies with RSD's identified in the California pilot project.

CONCLUSION

For the reasons described above, the results of California I/M pilot project appear to have significant ramifications for the future of I/M in California and nationwide. It is therefore essential that this crucial data be made publicly available without further delay. I urge you to provide this data to Lynn Scarlett for release at the March 23 congressional hearings.

Sincerely,

HENRY A. WAXMAN

Mr. WAXMAN. I urged him to give you the results from the remote sensing pilot project and to direct you to explain them to us today. Are you prepared to tell us what the pilot project says about remote sensing?

Ms. SCARLETT. I am prepared to tell you what we so far know. Let me make a clarification. The delay is because it has been proved to be a much more monumental task to evaluate 2 million different data points, match those data points up with vehicle registration numbers and so on than had been anticipated. It is a very, very complex project and we, in fact, do not have the analysis in. So it's not a question of holding it back.

Mr. WAXMAN. I find that curious because I have Mr. Austin's testimony and he's been able to perform a rather complete analysis of the data and he's not even an employee of California. If he can do this, surely you can, too.

Ms. SCARLETT. We are in the process, as I said, of doing so. The data, at least as I understand it, that Mr. Austin evaluated had not been what we call QA'd. That is, there are always, in any data set, you need to look at discrepancies, you need to look at problems, you need to identify whether the remote sensing sites, for example, were adequately functioning or not and match that to the data.

It's my understanding that Mr. Austin did not do that. We are, because this is going to be a published report, required, we think, to do a full scientific analysis and that's what we're doing and it is taking time.

Mr. WAXMAN. Thank you. Excuse me. I have some other points I want to get to.

Ms. SCARLETT. If you wanted, I would also answer what we do know about the remote sensing at this point.

Mr. WAXMAN. I think if you don't have the complete data and we're not able to hear Mr. Austin, we'll just put that off for another time.

Mr. Chairman, I just want to review for the committee some California I/M history and I want to do this because it seems that so much of what we are hearing today ignores the history of inspection and maintenance in California. I have a series of exhibits that I want to offer to the committee, and I do want to show it to the witnesses. The first exhibit, Exhibit 1, is a letter from the original California I/M Review Committee from August 25, 1992.

This letter states, "The Review Committee agrees with EPA's views regarding the inherent advantage provided by I/M programs that separate inspections and repairs. Such programs eliminate the potential conflict of interest associated with inspections and repairs being performed by the same facility."

The second exhibit I'd like to have in the record is an August 26, 1992 letter from the California EPA. In this letter, California EPA is writing to oppose an EPA proposal to allow States to continue

to allow decentralized service stations to conduct motor vehicle inspections. The letter states, "We fail to understand why EPA has proposed to allow States one more try to make test and repair programs effective. This is an example of bad public policy which could, in fact, be implemented as a result of strong public pressure from participants in our current smog check program to preserve the status quo. We urge EPA to delete the one-more-try-at-test-and-repair program option from the final rule."

These are two exhibits. Exhibit 3 is a September 2, 1992 letter from Governor Wilson to EPA Administrator Bill Riley, and this letter says, "It's curious that EPA is proposing to allow States one more chance to develop programs which allow inspection and repair at the same business because it makes no sense to invest 5 more years in a program if the professionals who evaluate I/M programs cannot identify how test and repair programs can be most effective."

Exhibit 4 is a February 8, 1993 report of the original California I/M Review Committee to the State legislature. This report says that California's decentralized I/M program is only half as effective as it could be. To increase the effectiveness, the I/M Review Committee recommends that all vehicles be initially inspected in a centralized inspection facility."

And Exhibit 5 is a March 19, 1993 report of a peer review committee brought in to peer review Exhibit 4, the report of the original California I/M Review Committee. This peer review committee concurs with the findings of the Review Committee.

[The exhibits referred to follow:]

A-91-75
IV-D-47

CALIFORNIA I/M REVIEW COMMITTEE

SMOG CHECK

R.J. Farnsworth, Chairman
9180 Chesapeake Drive
San Diego, California 92123
(619) 694-2201

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Shasta County APCD
Sierra County APCD
Siskiyou County APCD
Tehama County APCD
Ventura County APCD
Yolo-Solano County APCD

Environmental Protection Agency
The Air Docket, Room M-1500 (LE-131), Waterside Mall
Attention: Docket No. A-91-75
401 M Street S.W.
Washington, D.C. 20460

This letter provides the California I/M R Committee* comments in response to EPA's recent NPRM regarding V Inspection and Maintenance Requirements for State Implem h Plans (40 CFR 51).

Because motor vehicles are major contributors to air quality problems in California, the State and local air districts are heavily interested in reducing vehicle emissions by every means available. Accordingly, we support efforts to foster effective and cost-effective enhanced inspection and maintenance programs. In addition, we support the concept of holding states to a performance standard representative of the emission reductions that can be achieved using state-of-the-art procedures. As explained below, we do have significant concerns that the draft guidance is overly prescriptive and believe that additional information is needed before specific enhancements to the California I/M program can be endorsed or implemented. The Review Committee agrees with EPA's views regarding the inherent advantages provided by I/M programs that separate inspections and repairs. Such programs eliminate the potential conflict of interest associated with inspections and repairs being performed by the same facility.

The Review Committee also concurs with EPA's conclusions regarding the customer convenience benefits of programs that separate inspections and repairs by using specialized, high-volume, "centralized" test facilities. Although the perception exists that the inspection and repair process takes longer in centralized I/M programs, this is usually based on the erroneous belief that lengthy queues are common at centralized inspection stations while inspections are performed

* The California I/M Review Committee, created by the State Legislature, consists of representatives from the California Air Resources Board and each local air pollution control district in which the California I/M program has been implemented. In performing its statutory mandate, the Review Committee monitors the performance of the I/M program and develops recommendations for program changes for consideration by the Legislature.

"...created to analyze the effect of the program on motor vehicle emissions and air quality."
Health & Safety Code Section 44021

immediately at decentralized inspection facilities. California's experience with both types of programs indicates that the total time required to wait for and receive an inspection is normally less at a centralized facility. By providing economies of scale that reduce inspection costs, a centralized test program will also be cheaper than a decentralized program with the same design elements.

Notwithstanding the advantages of programs in which the inspection and repair functions are separated, the proposed regulations and "supplementary information" published by EPA reflect a view that alternative programs cannot possibly achieve comparable emission reductions no matter how much effort a state might put into their development and implementation. While available data do support a substantial discounting of the theoretical benefits of "decentralized" programs under which inspections are performed at automotive service facilities, there is no data indicating that centralized programs using comparable inspection procedures achieve nearly 100% of the theoretically possible I/M benefits (emission reductions), as EPA

One primary concern with the proposed regulation is that, contrary to EPA's claims, it does not establish a performance standard for I/M programs. As drafted, the proposed requirements constitute a design standard under which each state may be expected to use virtually identical equipment and procedures. The provisions for approving alternative program designs are substantially negated because the measure of alternative program equivalency is an EPA computer model that, in its current form, does not reflect programs that do not fit neatly into one of EPA's preconceived design concepts. The model appears to overstate the benefits of the I/M program design preferred by EPA. This being the case, model results obtained using alternative concepts will improperly be determined to be inferior if they fall short of the optimistic projections the model produces for the EPA-preferred concept.

We question whether, as currently proposed, EPA's I/M standard is a valid "performance standard" as required under the Clean Air Act §182(a)(3), or if EPA's guidance provides states with "continued reasonable flexibility to fashion effective, reasonable and fair programs for the affected consumer" (CAA, §182(a)(3)(B)(ii)). EPA has presented its proposal as flexible, but our review indicates it is not. The Review Committee believes the proposal needs to be amended to provide more program design latitude, especially if states actually measure the mass emissions changes associated with alternative I/M concepts by testing vehicles representative of those in customer service. Additional general comments and specific comments on several provisions of the proposed regulation are set forth below.

General Comments

EPA's optimistic projections of centralized I/M program benefits appear to be due to the implicit assumption that almost all vehicles that fail the test will be properly repaired. There is no data to support this

Exhibit 1

assumption, which is built into the MOBILE4.1 model. In fact, available data indicate that this will not occur.

The preamble to the proposed regulations recognizes that repairs to vehicles failing a transient I/M test may be unsuccessful, resulting in vehicles "ping-ponging" back and forth between inspection and repair facilities. Guidance proposals to address this problem emphasize improving the capability of the repair industry.

It is unlikely that the repair industry can be substantially improved in the time frame in which high tech I/M programs are to be implemented. The suggested approaches for improving the ability of automotive service facilities to identify and correct emissions-related defects (e.g., "special diagnostic centers... ...staffed by expert repair technicians") are lofty but questionable. Barring substantial improvements in service industry performance, the failure rate upon retest can be expected to exceed a publicly and politically acceptable level. The political viability of centralized I/M programs will likely depend on waivers being granted to vehicles taken to a state-certified repair facility, regardless of whether the vehicle passes the retest. This may result in a substantial drop in the emission reductions achieved by the program.

The Review Committee believes that effective repairs can only be expected if mechanics are well-trained and if detailed diagnostic information is provided for failing vehicles. We have received testimony and requests from the automotive service industry, urging the State to test and certify service technicians, and to require continuing in-service training. We urge EPA to retain certification requirements in its I/M regulations. This would be an important step to improve repair capabilities.

We doubt that the proposed "high tech" test will provide adequate information without supplemental diagnostic procedures. Supplemental diagnostic testing will increase the cost of the high tech option. The reported cost-effectiveness also depends in large measure on the assumption that significant fuel economy benefits will be achieved through the correction of evaporative emissions-related defects. Such benefits are likely overstated. Our analysis indicates that the cost per test may exceed $30 if diagnostic information is also provided to the owners of failing vehicles. Some alterations to the proposed test procedures may be needed to keep the cost down.

The Review Committee agrees that the "high tech" testing procedures proposed by EPA for enhanced I/M programs will improve the rate at which emissions-related defects are identified, however, other programs which are lower cost and more convenient to the public may be able to achieve comparable defect identification rates using alternative procedures, such as the ASM steady-state test developed by California. We understand that EPA is conducting some comparison tests and we would like to review the data and results as soon as possible.

Although the proposal states that "EPA is open to such alternatives and states may seek approval of alternative tests...", the proposal also indicates that "...a state will have to use the most current version of EPA's mobile source emission factor model available at the time of SIP submission to demonstrate its program will reduce VOC, NOx and/or CO emissions to levels that are equal to or less than those that would be achieved by the 'model' program." As previously indicated, the model has been designed to discount the projected benefits of alternative programs, regardless of what features are included.

Specific Comments

§51.350.2 Enhanced I/M Performance Standard
§51.350.3 Basic I/M Performance Standard

It is proposed that program performance shall be evaluated using "...the most current version, at the time of submittal, of the EPA mobile source emission factor model or an alternative model approved by the Administrator...". The current version of EPA's mobile source emissions factor model assumes that all centralized programs are nearly 100% effective and all decentralized programs are 50% effective, regardless of the quality of inspections and repairs in decentralized programs. EPA is measuring the performance of I/M programs using two different yard sticks. All of the marks on the centralized yard stick are labeled "100%", while all of the marks on the decentralized yard stick are labeled "50%". For "enhanced" programs, the element of the proposed "performance standard" related to on-road testing is similarly arbitrary. At least 0.5% of the subject vehicles are required to be tested, but no specific level of credit is associated with this or any other testing level. The final rule should make it clear that states will be able to use alternative effectiveness estimates whenever data has been collected using data analysis, tampering checks, and undercover surveys of the type EPA proposes for states to use to demonstrate "case-by-case equivalency" for test-and-repair programs. If California adopts a test-only program, estimates of the effectiveness of the program should not be based on a generic EPA model when the state is likely to invest millions of dollars in determining the true effectiveness of the program through the collection of such survey data. California should be free to use an alternative model if California-specific FTP data are used to develop the model.

§51.350.4 Network Type and Program Evaluation

It is unreasonable to require states with relatively large vehicle populations subject to the I/M program to perform mass emissions tests of at least 0.1% of the vehicles subject to the program when transient mass emissions tests like the IM240 may not be conducted as part of the routine inspection procedures. It would appear reasonable for EPA to provide states the option of performing fewer tests using a more sophisticated test procedure, like the cold start FTP. In addition, states should receive credit for testing the same vehicle more than once when the testing program has been designed to track individual vehicles through the I/M process. Finally, consideration should be given to the

total number of vehicles tested so that a lower percentage of vehicles can be tested when the statistical confidence in the test results is high or higher than that achieved in smaller I/M programs testing 0.1%.

The basic concept for giving states the opportunity to demonstrate "case-by-case equivalency" is flawed in that the results of surveys conducted on alternative programs are apparently to be compared to the results of the EPA emission factors model for "preferred" programs. Because of the optimistic benefit estimates the model provides for centralized, DM240 programs, a fair evaluation of alternative program concepts probably requires survey data from each of the concepts being compared.

§51.350.8 Test Procedures and Standards

The dilution limits contained in the referenced appendices will not be effective in detecting vehicles with severe exhaust system leaks or with inadequate probe insertion. There is no reason to test all vehicles with as little as 4% $CO + CO_2$. When warmed up for I/M testing, almost all 1981 and later model passenger cars run closed-loop. Under such conditions, the combination of CO and CO_2 emissions should be approximately 13%. Allowing for instrument error (±0.13% CO, ±0.3% CO_2) and 13% dilution, a more reasonable $CO + CO_2$ minimum would be 12%. Lower minimums should be used only for lean-burn vehicles or vehicles equipped with air injection systems designed to function during warmed-up operation. Similar $CO + CO_2$ minimums should be applied to transient testing.

The suggested language regarding the application of standards to vehicles with replacement engines is inappropriate to the extent that it would require the use of catalytic converters on vehicles not originally equipped with catalysts. Given the increasing age of vehicles subject to future I/M programs, it is not appropriate to implement a replacement engine policy that discourages the use of late model engines in pre-1975 model vehicles. Even without catalysts, late model engines can be expected to provide superior emissions control. The required use of catalysts also raises safety concerns in vehicles not originally designed for catalysts. We suggest that EPA allow states to use the engine change policy and aftermarket parts approvals sanctioned by ARB.

§51.350.9 Test Equipment
§51.350.10 Quality Control

Although the suggested provisions of these sections are reasonable for the test equipment envisioned by EPA, certain requirements (e.g., preventive maintenance on all inspection equipment shall be performed on a periodic basis, not to exceed 1 month) are likely to prove unnecessary as the equipment technology advances. Each of these sections must have language added providing for approving alternative specifications and procedures demonstrated to be equivalent or superior.

The requirement for "...a real-time data link host computer that prevents unauthorized multiple initial tests on the same vehicle in a

test cycle and to insure test record accuracy." The concept of requiring a data link to a state-controlled computer is not unreasonable; however, the proposed requirement to prevent a motorist from going from one inspection location to another is inappropriate. The practical benefits of preventing this activity are highly questionable. There is no real problem created if someone wants to spend the time and money to obtain multiple inspections. Motorists who attempt their own repairs should be allowed to have their vehicle inspected more than once. The prohibition against multiple initial tests should be deleted.

§51.350.12 Motorist Compliance Enforcement
§51.350.13 Motorist Compliance Enforcement Program Oversight

Although most of the proposed provisions of these sections appear to be reasonable and necessary, the requirements to "track exemptions for vehicles claimed to be out-of-state" and "tracking and follow up on out-of-area or exemption-triggering registration changes" is unclear. If EPA is proposing that states should tabulate the percentage of such exemptions to insure that it is at some minimal level, then there is no objection. However, it would be impractical for motor vehicle departments to actually be expected to determine whether each such claim is valid on a routine basis. Having motorists make the declaration under penalty of perjury should be considered sufficient unless these detailed requirements are unacceptable.

§51.350.15 Enforcement Against Contractors, Stations and Inspectors

The specificity regarding penalties, suspensions, and administrative procedures contained in this section go far beyond what could reasonably be considered "guidance". States should be free to establish their own mix of enforcement actions provided they can demonstrate that the enforcement element of the program is working effectively. As proposed, these detailed requirements are unacceptable.

§51.350.19 Public Information and Consumer Protection

The proposed requirement of each motorist failing the test to be given a list of certified repair technicians in the area and the results of repairs performed by repair technicians in the area is neither practical or feasible. The practicality of providing each motorist failing the test with information regarding the relative performance of all service technicians in the area has not been demonstrated, even if it were technically feasible. In addition, attempting to distinguish between the performance of technicians based on I/M data analysis has not been demonstrated to be feasible. It is more realistic to put the burden on the state to ensure that all participating technicians are performing in an acceptable manner. Keep in mind that vehicle owners usually do not have the opportunity to specify a specific technician and there is frequent turnover in personnel at most facilities.

§51.350.20 Improving Repair Effectiveness

It is not reasonable to expect each state to develop the capability to effectively assist mechanics in the repair of failing vehicles through a "hot line" service. This proposal indicates unrealistic expectations regarding the ability of states to assist in the repair of vehicles failed using test procedures that primarily measure emissions performance rather than identifying component malfunction. There is no evidence that states are generally capable of performing this service in an effective or efficient manner. We do believe that vehicle and diagnostic information needs to be provided to service technicians and will support efforts to improve the current system.

§51.350.22 On-Road Testing

The proposed regulations would require on-road testing of 0.5% of the subject fleet each year. As in the case of mass emissions testing, it would appear reasonable for EPA to provide states the option of performing fewer tests using a more sophisticated test procedure, such as the very comprehensive inspections performed in California of vehicles stopped for random roadside inspection by the California Highway Patrol. In addition, consideration should be given to the total number of vehicles tested so that a lower percentage of vehicles can be tested when the statistical confidence in the test results is high or higher than that achieved in smaller I/M programs testing 0.5%.

Section (a)(4) suggests mailing notices of infraction based on remote sensing. This is not appropriate, because te sensing does not prove that there is any defect or tampering. Visual inspections or I/M test procedures must be used as the basis to require out-of-cycle follow-up inspections. Otherwise, a large fraction of false failures may result.

§51.350.24 Implementation Deadlines

The proposed requirement for enhanced I/M programs to be implemented by July 1, 1994, does not provide sufficient lead time for states like California that will require new statutory authority. The state Legislature cannot be expected to grant broad authority for the administration to make sweeping changes in the current program. A detailed proposal for program changes will have to be prepared after EPA's guidance is in final form. January 1, 1994, is the earliest date by which the authorization to proceed with fundamental changes in the current program can be expected. Regardless of whether the revised program is centralized, decentralized, or some sort of hybrid, six months is not sufficient time to revise regulations, procure and install new equipment, provide additional training, and re-certify participating inspectors and technicians. Should California decide to convert to a test-only program, the proposed phase-in (subjecting only 30% of the vehicles to the test-only program by July of 1994) does not provide meaningful relief. Attempting to establish a network of inspection facilities capable of serving only 30% of the vehicles will not save much time and will increase the risk that the public will find the number and proximity of inspection facilities inadequate.

California Environmental Protection Agency IV-D-15

Pete Wilson
Governor

James M. Strock
Secretary for Environmental Protection

August 26, 1992

Environmental Protection Agency
The Air Docket, Room M-1500 (LE-131), Waterside Mall
Attention: Docket No. A-91-75
401 M Street S.W.
Washington, D.C. 20460

RECEIVED
EPA AIR DOCKET

The California Environmental Protection Agency (Cal/EPA), and California State and Consumer Services Agency, are pleased to offer comments on the Environmental Protection Agency's (EPA) notice of proposed rulemaking entitled: Subpart S - Vehicle Inspection and Maintenance Requirements for State Implementation Plans. Cal/EPA's Air Resources Board is responsible for developing the state's non-attainment plans, including its motor vehicle emission control program. Within the State and Consumer Services Agency, the Bureau of Automotive Repair (BAR) implements and administers the vehicle inspection and maintenance program, called Smog Check.

One quarter of the nation's vehicles which are subject to federal inspection and maintenance (I/M) requirements are located in California, thus we have a large stake, and strong interest in this proposed regulation.

Performance Standard We strongly support the proposed emission performance standard. Enhancing Smog Check will provide the single largest reduction in volatile organic compound (VOC) emissions of any control measure currently available to us. Reductions in carbon monoxide (CO) and oxides of nitrogen (NOx) emissions will also be substantial. Our analyses have shown these reductions will be cost effective when compared to many other control measures under consideration. Given these facts, there is strong rationale for EPA adopting a challenging minimum performance standard for enhanced I/M, and we urge you to adopt the performance standard, as proposed.

Preliminary results from the ongoing evaluation of our program indicate it achieves roughly one half of the emission reductions required by the proposed performance standard, which is based on EPA's model I/M program. Thus our current Smog Check program will require substantial modification to achieve the proposed performance standard. New legislation will be needed to authorize the enhancements. Our success in obtaining this legislation, and implementing the needed improvements to our program, depends on our ability to design an enhanced program which addresses concerns of our legislature and the men and women who have invested heavily in our current Smog Check program. As a result, California's enhanced I/M program may differ considerably from the program design EPA has so strongly advocated.

555 Capitol Mall, Suite 350 • Sacramento, California 95814 • (916) 445-3846 • Fax (916) 445-6401

Printed on recycled paper

California Environmental Protection Agency IV-D-115

Pete Wilson
Governor

James M. Strock
Secretary for Environmental Protection

August 26, 1992

RECEIVED
EPA AIR DOCKET

Environmental Protection Agency
The Air Docket, Room M-1500 (LE-131), Waterside Mall
Attention: Docket No. A-91-76
40 M Street S.W.
Washington D.C. 20460

The Ca ifornia Environmental Protection Agency (Cal/EPA), and Ca ifornia State and Consumer Services Agency, are pleased to offer comments on the Environmenta Protection Agency's (EPA) notice of proposed rulemaking entitled: Subpart S - Vehicle Inspection and Maintenance Requirements for State Implementation Plans. Cal/EPA's Air Resources Board is responsible for developing the state's non-attainment plans, including its motor vehicle emission control program. Within the State and Consumer Services Agency, the Bureau of Automotive Repair (BAR) implements and administers the vehicle inspection and ma ntenance program, called Smog Check.

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Exhibit 2

ASM5015/2-speed-idle tests is presented below. We believe these preliminary data support the contention that the ASM test has sufficient merit to justify a ful emission and cost evaluation by EPA, and inclusion in the MOBILE model as an alternative to IM240.

Comparison of the IM240 and ASM Steady-State Loaded Mode Tests

TEST	POLLUTANT	CORRECT PASS %	CORRECT FAIL %	ERRORS OF OMISSION %	ERRORS OF COMMISSION %
240	HC (Purge)	90	8	2	0
ASM		89	9	0	2
240	HC (Exhaust)	29	53	16	2
ASM		24	42	27	7
240	CO	42	38	7	13
ASM		51	33	11	4
240	NOx	78	16	0	7
ASM		80	7	9	4

Note: Percentages may not add to 100% due to rounding. Sample size for the purge test comparison is 80 evaporative controlled vehicles, including pre-1981 models. Cutpoints for the ASM exhaust test are of similar stringency to those recommended by EPA for the IM240.

As illustrated by the data in this table, the ASM test provides a purge evaluation whose performance is equivalent to the IM240. The ASM test properly fails cars with excessive HC and CO exhaust emissions at a rate which approaches that of the IM240, while maintaining low errors of commission. The ASM has a lower identification rate of high NOx emittors, compared to the IM240. This result is inconsistent with previous investigations, and requires further investigation.

Continuation of Test and Repair Programs. Just as we believe it is essential that EPA provides the tools to evaluate plausible alternatives to EPA's preferred program, we do not support a policy which allows states to implement programs for which there is no evidence that the program design can meet the emission performance standard. We believe that EPA's proposal to allow states one-more-try to improve the performance of I/M programs, which allow the same facility to perform inspections and repairs, is an example of the latter, and should be deleted from the final rule.

In presentations, and in the preamble, EPA confidently concludes that programs which allow test and repair at the ame fac ity cannot be improved sufficiently to meet the proposed performance standard. EPA's MOBILE model assigns a 50 percent effectiveness to repairs performed in this type of

program. California's experience also suggests that doubling the emission reductions of our current program, which would be needed to meet the proposed performance standard, appears unattainable if test and repair at the same facility is allowed to continue.

Given EPA's public pronouncements that repairs in test and repair programs can never be more than one half as effective as repairs in programs where inspection and repair is done at separate facilities, we fail to understand why EPA has proposed to allow states one-more-try to make test and repair programs effective. As an EPA staffer recently stated, EPA will allow you to try this option, but you are destined to failure. This is an example of bad public policy which could in fact be implemented as a result of strong pressure from participants in our current Smog Check program to preserve the status quo. We urge EPA to delete the one-more-try-at-test-and-repair program option from the final rule, unless EPA can make an analytical demonstration that this type of program can be effective enough to comply with the performance standard. Sound data and the MOBILE model, rather than bad public policy, should decide if test and repair programs should be continued. In making this recommendation, we ask only that EPA hold itself to the same standard of proof you propose to impose on states wishing to pursue alternative programs.

Notwithstanding the above comments, we note that should California decide to try to improve the current test and repair program, and fail to achieve the emission reductions mandated by EPA, insufficient time would remain to implement the required, enhanced test-only biennial program by the deadline contained in the proposed policy, which is January, 1998. Full implementation would take at least 18 months longer, and this assumes a rapid evaluation and decision on EPA's part that the test and repair program has in fact failed to comply with the performance standard.

Furthermore, EPA would allow states full emission reduction credit for the 4 to 6 year period during which EPA seems convinced real emission reductions from the test and repair program will fall up to 60 percent short. Because EPA has provided no evidence to suggest test and repair programs will achieve full emission reductions, the credit allowed in the State Implementation Plan (SIP) should be limited to that determined by the MOBILE model.

Implementation Milestones We support the proposal to allow a committal SIP to satisfy the November 15, 1992 deadline for I/M SIP submittal. Many states, including California, must seek new authority to enhance I/M. The tardiness of EPA's policy guidance precluded us from seeking legislation in 1992. Even now we will be forced to commit to a program design and to meeting a performance standard which will not be finalized in regulation at the time the committal SIP undergoes public hearings.

We urge EPA to provide additional time to implement enhanced I/M. The earliest we will be able to obtain the necessary legal authority for

We hope you find these comments, and the additional comments included in the attachment, useful in finalizing this important regulation. Of our many comments, we urge you to give highest consideration to reducing the prescriptiveness of the regulation, modifying the model used to determine compliance with the performance standard so it can accommodate alternative programs states may desire to implement, completing your evaluation of the ASM steady-state tests and incorporating them into the performance model, deleting the option allowing states to continue test and repair programs unless you can show this type of program can meet the performance standard, and committing to a major, national effort to facilitate the upgrading of mechanic repair skills.

Sincerely,

James M. Strock
Secretary for Environmental Protection

Andrew Poat
Undersecretary, State and Consumer Services Agency

Attachment

4/11 AC to BW
AX925979

PETE WILSON
GOVERNOR

State of California
GOVERNOR'S OFFICE
SACRAMENTO 95814

TELEPHONE
(916) 445-2841

September 2, 1992

The Honorable William K. Reilly
Administrator
Environmental Protection Agency
401 M Street S.W.
Washington, D.C. 20460

Dear Bill:

The Vehicle Inspection and Maintenance (I/M) program, which we call "Smog Check" in California, plays a critically important role in our efforts to improve air quality. Our detailed evaluation of this program has demonstrated reduced emissions, and this is one of the reasons why air quality has improved substantially during the past few years in most of California's cities.

Our evaluation also shows that Smog Check needs to be improved to increase the effectiveness of the program and protect the interests of consumers. Thus, I share with you the importance of implementing an enhanced Smog Check program as required by the 1990 Clean Air Act. As you know, I worked for this law's passage as a U.S. Senator and, as Governor, I am committed to seeing that it is effectively implemented in the most cost effective manner.

My state agencies are providing you with detailed comments on EPA's proposed rule designed to establish minimum requirements for enhanced I/M programs. However, I feel it is important that I emphasize to you personally several points of importance to California.

You have proposed an emission-based performance standard to ensure effective enhanced I/M programs. I support this approach because it provides those who implement I/M programs the flexibility to design them to meet local conditions. California has provided leadership and innovation in the air pollution control arena, and we wish to continue this tradition with enhanced I/M. Furthermore, one quarter of all vehicles subject to I/M nationwide are registered in California, thus ensuring that we have substantial stake in this issue.

Exhibit 3

As the Clean Air Act specifically allows EPA to establish program administration features needed to ensure that the performance standard can be met, I urge you to review your current proposal to remove as many federal implementing mandates as possible. The most important administrative elements should have their impact on emissions quantified and incorporated into the methodology used to determine compliance with the performance standard. In any case, EPA should provide the individual states with the greatest degree of flexibility in how the enhanced I/M program is implemented, which should result in lower costs and a more effective program.

As California's Smog Check program employs tens of thousands of people in many small businesses, I am very sensitive to any impact an enhanced program may have on their livelihoods. Thus, I ask you to personally review the proposed regulation to ensure that it provides the maximum degree of flexibility to states implementing enhanced I/M. In particular, my staff believes lower cost steady-state dynamometer inspection tests, which could ensure greater small business participation in Smog Check, may be viable options to implement the new clean air act requirements. However, I understand that the current method used by EPA to show compliance with the proposed performance standard effectively excludes use of these lower costs tests. I urge you to address this issue before the regulation is finalized so that these tests will be allowed if they are shown to be effective.

Also, throughout the documentation supporting its proposed rule-making, and in various public statements, EPA has advocated the benefits of prohibiting the same business from inspecting and repairing a vehicle. EPA attributes the poor quality of inspections, as well as inadequate repairs, to the apparent conflict of interest inherent in programs which allow inspection and repair at the same facility. Thus it is curious that while EPA so strongly advocates the separation of inspection from repair, it is proposing concurrently to allow states one more chance to develop programs which allow inspection and repair at the same business.

Therefore, before finalizing this rule-making, I urge you to make available a technical assessment of what types of test and repair programs could achieve the performance standard, and those options which fail should be eliminated. Clearly, it makes no sense to invest five more years in a program if the professionals who evaluate I/M programs cannot identify how test and repair programs can be most effective.

Clearly each of these important issues should be addressed prior to the November 6, 1992 deadline for finalizing this rule-making. I look forward to working with you on this important issue, and please do not hesitate to call me with any questions you may have, or your staff may call James D. Boyd, Executive Officer of the Air Resources Board, at (916) 445-4383, if we can be of further assistance.

Sincerely,

Pete

PETE WILSON

PW:lg

EVALUATION OF THE CALIFORNIA SMOG CHECK PROGRAM AND RECOMMENDATIONS FOR PROGRAM IMPROVEMENTS

EXECUTIVE SUMMARY

Fourth Report to the Legislature

February 8, 1993

submitted by:

The California I/M Review Committee

Chairman
R.J. Sommerville
San Diego County Air Pollution Control District

---------- Participating Members ----------
Air Resources Board
Bay Area Air Quality Management District
Sacramento Metropolitan AQMD
San Diego County Air Pollution Control District
South Coast AQMD
Ventura County APCD
Santa Barbara County APCD

Exhibit 4

Abstract

Based on the largest testing program ever conducted to evaluate the effectiveness of a vehicle inspection and maintenance (I/M) program, California's Smog Check program is only about half as effective as it should be. The major problems with the program are:

- The current test procedures, which measure emissions with the vehicle at idle and 2500 rpm, are not capable of identifying many vehicles that have excessive emissions during stop-and-go driving.

- Many emissions-related defects that could be detected through visual or functional inspections are being missed or ignored by Smog Check mechanics. Only 24% of all vehicles are receiving a reasonably thorough inspection.

- Vehicles that do fail the current test are not being fully repaired, in some cases because the repair cost ceilings are too low and in other cases because some mechanics are ineffective in diagnosing and repairing late-model vehicles with computer-controlled engines.

In order to improve air quality in California and to meet the "enhanced I/M" performance standard recently established under the 1990 amendments to the federal Clean Air Act, numerous improvements to the Smog Check program are required in urbanized areas with the most severe air pollution (the South Coast Air Basin, Ventura, San Diego, Sacramento, Fresno, and Bakersfield The test procedures used in the current program need to be replaced with test procedures involving the use of treadmill-l ke devices called dynamometers which can measure emissions with a load on the engine Visual and functional inspections to find problems that cannot be identified by an exhaust emissions test (e.g., evaporative emissions control systems defects need to be performed independently at a facility that is not involved in the repair business. More repairs need to be performed by "technicians" with superior skills, and higher repair cost ceilings will also be necessary to ensure that more vehicles can be fully repaired.

Although the equipment required for dynamometer testing is relatively expensive inspection costs can remain at or below current levels through the use of special-purpose high-volume testing facilities operated under contracts awarded on a competitive basis. This approach will minimize inspection cost while addressing federal requirements for separating inspections and repairs. Although the approach has not yet been approved by the U.S. Environmental Protection Agency the I/M Review Committee is recommending a "hybrid" I/M program under which highly qualified private garages are allowed to do the final inspection after repair of vehicles that initially fail at a "test-only" inspection station.

The proposed program is estimated to double the emissions benefits of the current program with no increase in test cost and a positive net effect on employment. The Review Committee is also recommending major new efforts to improve the quality of technician training and to assist technicians in the repair of defective vehicles by making service information more readily available.

###

03/19/1993

To: Senator Robert Presley, Chairman, Senate Special Committee on Vehicle Emissions and Vehicle Inspection and Maintenance

Jananne Sharpless, Chairwomen, California Air Resources Board

From: Members of the Inspection and Maintenance Peer Review Panel[1]

Subject: REPORT OF THE PEER REVIEW PANEL, FOURTH ANNUAL REPORT ON THE CALIFORNIA INSPECTION AND MAINTENANCE PROGRAM

EXECUTIVE SUMMARY

On February 16, 1993 the California Inspection and Maintenance Review Committee submitted its Fourth Report To The Legislature. This report will be a critically important component of the California legislature's review of the current I/M program. In addition, it will serve as an important basis for future improvements in the program. As the report was strongly criticized by some after its initial release, it was decided to call upon an expert panel of peers to review the science which formed the basis for the Committee's conclusions. In carrying out its review, the Panel carefully reviewed the document, discussed its details with members of the California Air Resources Board and the Bureau of Automotive Repair and the Chairman of the I/M Review Committee, reviewed the underlying data and analysis with the Committee's principal consultant, Sierra Research, assessed the written comments of the participants at the February 16th Senate Transportation Committee Hearing, viewed a videotape of the Committee Hearing, and, finally, met with several of those participants to review their concerns in more detail.

Following this review, the Panel reached several conclusions:

1. The vehicle procurement and testing program carried out by the Committee to evaluate the current Smog Check program was well designed and implemented. The program relied primarily on the evaluation of 1110 vehicles, borrowed from their owners, which were due for and underwent a Smog Check and failed. All evaluations based on vehicles voluntarily loaned by their owners suffer from certain inherent limitations; the Panel believes all reasonable efforts were made to overcome these limitations and that these efforts were effective.

2. A review of the 1110 vehicle study mentioned above, actual tampering data, on-road random roadside measurements (including remote sensing based studies) and recent Los Angeles fraud investigations support the conclusion of the Committee that the current program is falling far short of achieving its full potential.

---

[1]Michael P. Walsh, Chairman; Rob Klausmeier; John H. Seinfeld.

Exhibit 5

3. Considering all the data, the Panel concludes that the results of the 1110 vehicle study represent the likely upper bound of the actual emissions reductions occurring in the current program; actual improvements could be less. The methodology used by the Committee to account for fraud minimizes this risk.

4. The Panel also agrees with the I/M Committee's conclusion that a significant number of vehicles with emissions problems are being identified by the current program and some of these vehicles are receiving sufficient repairs to achieve substantial emissions improvements. As a result, the overall reductions from the current program are probably much closer to the Committee's estimate than to zero.

5. The random roadside data were used appropriately by the Committee to evaluate the representativeness of the test vehicle sample with regard to tampering; the Panel agrees that use of the random roadside data (including Remote Sensing) instead of the 1110 vehicle test program results to quantify the benefits of the current program would have been inappropriate.

6. The Panel agrees with the Committee that there is no data which would indicate that the current program which combines test and repair could be improved sufficiently to achieve the Clean Air Act performance requirements. Particularly telling in this regard is the apparent failure of the program improvements of the past few years to bring about significant advances compared to the previous Review Committee report.

7. The Panel agrees that data analyzed by the I/M Review Committee strongly support a shift to loaded mode testing and to a separation of the Test and Repair function for most, if not all, vehicles. The Panel is concerned that little or no data exist with regard to the on road emission reduction benefits of repairing vehicles to ASM loaded mode test standards.

8. The Panel also concludes that uncertainties remain regarding the emission reduction effectiveness of including a limited number of the Gold Shield stations, especially if they are based on the use of ASM loaded-mode test procedures.

9. The Panel concludes that the data support the greater use of remote sensing as a complement to periodic inspections. The Committee's report did not provide sufficient detail regarding the potential benefits such use could provide as a deterrent to tampering, as an enforcement tool to prevent fraud in the granting of certificates, and as a check on the overall effectiveness of the program.

(2)

Mr. WAXMAN. Now, that's an incredible record of exhibits, all spelling out a position that's contrary to the testimony we've received from these two witnesses. The Wilson administration and others contradicted earlier findings of California EPA, the original California I/M Review Committee, the peer review committee, and Governor Wilson himself, so the administration is changing their views from all of that.

Mr. BARTON. The gentleman's time has expired. We have a vote on. The gentleman will be given——

Mr. WAXMAN. I would not have a second round if I could just complete in another minute.

Mr. BARTON. At the conclusion, the Chair will recognize the gentleman from California for as much time as he may consume, but when he consumes his time, the Chair will recess until this vote is over. So we will reconvene at approximately 1:30 p.m. The gentleman from California is recognized.

Mr. WAXMAN. Thank you, Mr. Chairman. All of these exhibits point to the fact that in California, all of the experts were saying centralized I/M makes sense, decentralized may not. Yet, then there was a lot of political pressure and the legislature in California decided to disband the original I/M Review Committee in 1994 and set up the body that these two witnesses represent, and the new committee is far more political and scientific.

Its members are appointed by the legislature and the Governor. It has representatives of affected industries on it, such as representatives of the service station industry, and it has members on it who have no professional background in air pollution control.

Indeed, I've been informed that—well, let me leave it at that. What I'm raising by this chronology and these exhibits is that in California, all the experts that knew anything about it from a scientific point of view were saying one thing. When the politics got involved, the legislature decided to disband all those people that were pressing for one point of view and set up this committee to represent and come out with another point of view.

In other words, even though we hear from a lot of people that we ought to have policy based on sound science, it sounds now like we're saying science ought to be based on politics, and I raise that as a serious concern that I have. I raise it also to challenge the credibility of these two witnesses.

Mr. BARTON. With that——

Ms. SCARLETT. Would you like a response to the composition of the committee, at least for point of clarification?

Mr. BARTON. I don't mind continuing this. I mean, that's a fairly serious allegation or at least a statement. But we're going to have to recess until 1:30 p.m. So if the gentleman from California would like to return.

Mr. WAXMAN. I won't be able to return at 1:30 p.m., if you want to give her another minute.

Mr. BARTON. The problem is I want to make this vote, Mr. Waxman.

Mr. WAXMAN. Well, I certainly do, too. Let's leave the record open, then, if we can, so that the witness can respond.

Mr. BARTON. Sure. And I will come back at 1:30 p.m., and give the gentlelady a chance to respond and we'll make sure that the

gentleman from California is given an additional opportunity if he can return at some point in time this afternoon.

Mr. WAXMAN. Thank you.

Mr. BARTON. So we are recessed until 1:30 p.m.

[Brief recess.]

Mr. BARTON. The subcommittee will come back to order. When we recessed for the vote, Congressman Waxman had asked a question of Chairperson Scarlett and she was not given a chance to reply. Although Congressman Waxman is not here, would you like to reply for the record to the statement that Mr. Waxman made before we recessed?

Ms. SCARLETT. Let me respond specifically to the comment that Representative Waxman made with respect to the composition of the I/M Review Committee. I believe his statement, if I could characterize it, was that this committee is primarily a political one and one not qualified to examine these issues.

I would like to state who is on that committee and what their qualifications are. We have Dr. Gerry Aroesty. He is an engineer, a Ph.D. engineer from Rand Corporation, with a long history in reviewing automotive issues and I/M issues. Dr. Joseph Norbeck, who is also a Ph.D. in automotive engineering. Norman Kovel, who is with the Sacramento Air Pollution Control District. Betty Deacon, Professor Betty Deacon, who is a Ph.D. transportation scientist, with a long history, again, of work on air quality and transportation issues.

Dee Allen, who is with the city of Los Angeles, in charge of their air pollution control efforts. Joseph Charney, who is a District Attorney with the city of Los Angeles, in charge of enforcement programs and, in fact, primarily in charge of the enforcement programs and catching those who tamper their vehicles and escape the current smog check program. We do have two members of industry. One is Rob Mashon, who is with Arco. One is Dennis Dakota, who is with the industry, the automotive repair industry. We have myself. I am a political scientist and with a public policy think tank.

Let me underscore that precisely because the State of California considers inspection and maintenance programs to be more than a function of test equipment type, because we do view these programs as having a strong behavioral and enforcement component, the State thought that it was appropriate to have a wide array of representatives on that committee who were able to speak to such issues as enforcement, speak to such issues social behavior and program design.

Mr. BARTON. To your knowledge, are there any of the appointments which you would call purely political appointments or is this committee primarily one of merit and individuals who have an interest in the issue from a policy standpoint?

Ms. SCARLETT. I'm not sure that but all life is somewhat political. I can't speak to exactly why these appointments were made. I think the intent was to assemble a committee of individuals who had an intellectual interest in examining inspection and maintenance programs and achieving programs that are going to result in real and enduring emission reductions.

There is a representative, as I said, from the automotive repair industry. That individual is included because there is a sense that

obviously automotive repair industry does have some knowledge about this issue, and I believe they are included therefore.

Mr. BARTON. Now, again, Mr. Waxman is not here, but we will leave the record open if he has some follow-on questions in writing. Before I recognize Mr. Cox, I want to ask one question of Ms. Scarlett. Based on the information that your committee has to date on remote sensing, including some of these pilot studies that the data is still preliminary, what are your views on the potential effectiveness of remote sensing as a program component of an I/M program?

Ms. SCARLETT. Yes. Let me begin by underscoring that the committee, at this point, is examining RSD, remote sensing as a component of an overall program. It is certainly not at this point deemed to be the stand-alone element. What did we learn from the Sacramento pilot? We learned that in that 9-week period, 9 or 10-week period, we were able to do 2 million reads of vehicles. That represented over 400,000 individual vehicles of the 800,000 or so registered in the Sacramento Metropolitan Region.

That is, we read 50 percent of the total or approximately of all registered vehicles in Sacramento. One must understand that when you say, okay, is that effective, it depends on the question you're asking. Because we view remote sensing as playing an important ongoing monitor of on-road vehicle emissions and, second, because we view it as having potential as a deterrent—that is, to the degree that the consumer knows that they might get nabbed by the remote sensing, they may have an incentive to keep their car repaired—we view 50 percent coverage in a 9-week period as highly adequate to serve as a deterrent.

If you'll recall speeding programs, for example, we do not expect that 100 percent of all citizens get nabbed with a speeding ticket in order for speeding tickets to operate as some sort of a deterrent. We view remote sensing as a parallel. I think it's a good analogy. Fifty percent actually is, in our view, quite good.

What the study also did show us was something about site placement. Some of the sites of these remote sensors were better in terms of getting accurate reads and getting larger numbers of vehicles and, for our view, in terms of trying to develop a real world remote sensing program or remote sensing component, that information is useful and will help us in siting those effectively, so that we don't get these sites where you get low reads of improper reads.

Third, while this is still underway, and contrary to what has been hinted at here, the remote sensors do appear to be useful as helping the State to identify gross emitters; that is, identifying gross emitters and pulling them then in to further testing for diagnosis and ultimately repair. At this point, that's the most that I can say of the studies because the full analysis has not been done. And I should underscore that it is not a matter of having existing analysis completed and being sat on. The analysis is still, in fact, underway. I have not myself yet reviewed that analysis.

Mr. BARTON. Mr. Cox.

Mr. COX. Thank you, Mr. Chairman. Let me ask a question about the model that EPA uses, which you've had a chance to evaluate. Where does the model come from? Where was it developed? When was it developed? Who developed it?

Mr. SCHWARTZ. I don't think I can answer that question. Doug Lawson, unfortunately, who is not here, would probably have been the person to ask on that issue.

Mr. COX. How long has it been in use, to your knowledge?

Mr. SCHWARTZ. I think since at least the early 1980's, but I'm not positive.

Mr. COX. We have an analogous circumstance with the Base Closure Commission, which asks, first, all of the services to propose sites for closure. Any of us who have been involved in trying to determine whether or not the figures that are being used to determine whether a base should or should not be closed are good figures have run into the problem that there is a computer model that is at the heart of all of this. There are algorithms built into this thing and all the Pentagon does in the end is fill in screens of data. And when you ask them what happens to the data after that, they don't know.

And the model was developed some years back and whoever developed it seems never to be around to answer any questions. So it just sort of has a mind of its own and produces data that we can't always test.

I am concerned because what you have done is compare actual ambient air quality to what the computer model predicts the ambient air quality ought to be and you've found significant discrepancies. I wonder if it's fair to say that this boils down to a question of whether we want to believe the real world data or whether we want to believe the model.

Is that what we're talking about here?

Ms. SCARLETT. Ultimately, from the perspective of the I/M Review Committee and the State of California, we would hope to be able to evaluate our program against real world data rather than a model because we believe that the model falls short of giving us an accurate picture of reality. So your statement in that sense I think is correct.

Mr. COX. Mr. Schwartz, do you have a comment on that?

Mr. SCHWARTZ. Just briefly. There's really no reason to expect the model to predict the effective I/M accurately. First of all, the first part of the model that predicts emissions for vehicles on the road doesn't predict emissions accurately and then the second step of predicting what happens during I/M, all of the things that happen in the I/M process are assumptions that go into the model. They're not outputs of the model.

So the 50 percent discount is just multiplying the result of the model by half if the program is decentralized. The compliance rate is assumed. The EPA assumes a compliance rate of 96 percent. It doesn't go and measure the rate at which people actually comply with I/M programs. It just assumes what the compliance rate is.

So in other words, it's not a physical model of the way people actually behave and the way a physical process is developed. It's essentially numbers created with various assumptions that are multiplied together to get a result. It's not a model in the sense that scientists usually use the word.

Mr. BARTON. Would the gentleman yield?

Mr. COX. Sure.

Mr. BARTON. Is it your professional judgment that the EPA could change the model in such a way that it would reflect real world behavior?

Mr. SCHWARTZ. Well, I'm not sure. It would require a different model than what EPA now uses.

Mr. BARTON. To have any utility in the real world, they'd have to at least attempt that.

Mr. SCHWARTZ. As far as I know, at least two other researchers have tried to develop models that were designed to be more representative of the real world. One model was developed by Winston Harrington and Virginia McConnell, of Resources for the Future, and another was developed by Mark Pitchford, who used to be at EPA and is now at the National Oceanic and Atmospheric Administration, and you may want to talk to them about that.

Mr. BARTON. I yield back.

Mr. COX. But it does put one in mind of the old saul about an economist defined as a person who sees something work in the real world and rushes back to his office immediately to see whether he can make it work in theory.

Have you found whether or not there is an inertia here? Are there forces that we need to contend with that militate in favor of the status quo, that interfere with complete flexibility based on empirical science?

Ms. SCARLETT. I don't think it's accurate to characterize the current situation as militating against the status quo. I think that, in fact——

Mr. COX. Militating in favor of the status quo.

Ms. SCARLETT. In favor of, excuse me. I don't think that U.S. EPA is currently proposing that we maintain the status quo. In fact, they are suggesting that past programs have not performed that well and that we move forward to something else; that is, enhanced inspection and maintenance programs, with the use of this new high tech equipment, IM240.

The issue really isn't so much are we going to stay at the status quo as is where are we going to go and how much flexibility are we going to have. Are we going to continue to focus on what I would call the sort of technocratic program elements; that is, do we use this kind of equipment to test versus that kind of equipment to test and do we do it in this location versus that, or are we going to be able to introduce perhaps more variables, more complex program components, such as enforcement, such as on-road monitoring, and so on that might give us a better prospect of having a more robust program.

At the current time, because there are not credits given in the model for some of those other program elements, because the focus has been more on some of the technocratic aspects, and, albeit, in fairness to U.S. EPA, there are some others of these behavior components, but not all, it really binds the States in their flexibility.

Mr. COX. I thank you and yield back.

Mr. BARTON. The gentleman's time has expired. For the final question of this panel, the gentleman from Oregon is recognized.

Mr. WYDEN. Thank you, Mr. Chairman. Just one outside-the-beltway kind of question. Let's say Mr. and Mrs. Jones have got a car, they're driving to work together, and we do have this new sys-

tem in place and twice a day they go through the sensor and it goes off and something indicates that they've got a problem.

I guess what I want to know is what are going to be the limits in terms of the hassle factor, because these are going to be folks who presumably are going to go through it constantly. They're going to go through it twice a day.

Let's just say, hypothetically, that they go through as part of this twice a day operation, they've got their car checked, find that the RSD reading was artificially high. Are we going to say that the car is exempt then from future RSD readings because they didn't do anything wrong or something like that? Would that be the policy that you would think would make sense, Ms. Scarlett?

Ms. SCARLETT. These are the things we are grappling with. It may not be sufficient to have a single high read to warrant having the car either get a fix-it ticket or a fine or cancellation of registration or some of those more draconian kinds of efforts; that it might take actually a cluster of reads. And we, of course, have not settled on whether that would be 2 reads, whether that would be 3 reads, but that you would have to have some certain threshold of reads before you actually would get either a fix-it ticket or some other requirement with your vehicle.

We think that that would provide the insurance perhaps that vehicles would not inadvertently get pulled in that, in fact, are, in fact, just marginal emitters; that if you get read 3 or 4 times in different locations as a gross emitter, that's probably a good signal that you are a gross emitter and should have your vehicle repaired.

Mr. WYDEN. So if you get a read on three occasions, you're going to be going every month or something like that.

Ms. SCARLETT. No. Remember that——

Mr. WYDEN. If you're talking about you might get 60 a month, 3 are bad, what happens then?

Ms. SCARLETT. I think we need to remember the little chart or the little figure that Don Stedman put up. The vast majority of cars out there probably will not get tagged as a gross emitter at all. Most of the motorists, and, in fact, this is one of the advantages of remote sensing, will not be read as gross emitters at all. They will go again and again and again many, many times past the remote sensor without triggering a high read.

The small percentage that do trigger that high read, we do not know at this point how many times any individual car will get read over a period of time. What I can tell you is that in the Sacramento pilot study, in that 9-week period, we got 2 million reads. That represented over 400,000 individual cars. So some cars got read in 9 weeks only once. Some of them got read as many as 3 times and 4 times, depending on their driving patterns.

I don't think it would probably be quite the scenario that you're depicting, but if a car got read 3 times in a month, yes, they would be required to go in and get their car fixed.

Mr. WYDEN. I'm going to wrap it up on this point. What was the false positive rate in Sacramento?

Ms. SCARLETT. I don't know that yet. I do not have those data yet. I believe Joel may have some preliminary on that.

Mr. SCHWARTZ. There is no way to determine the false positive rate for comparing RSD to IM240 because the RSD readings were

taken at one point in time, the IM240 readings were taken 3 months later. Cars changed during that time. We know that it's due to variability in the cars because when we do the RSD and the IM240 at the same time, there is very good agreement.

Mr. WYDEN. What concerns me is that we all know about the limitations of the current system and we've certainly heard about the ping-ponging back and forth and the like. Part of what I'm concerned about as I listen to this, and I'm one for whom the verdict is still out with respect to this whole technology, I don't want to see us go to something that involves even more ping-ponging than what we have now.

If people are making those two trips every single day, going by sensors, under the traditional kind of program, they pay their money, they do it once, they're out. You've got people expressing concern about that, but under something like this, they're going through this twice a day and there aren't some standards or aren't some protections as it relates to false positives.

I think, (1) it's going to be even more hassle with respect to the ping-ponging and, (2) I would assume people would go out and spend even more money than they already are to try to avoid some of these kinds of concerns. I look forward to working with the chairman on this issue.

Mr. BARTON. Thank the gentleman. We want to thank this panel for participating and staying for an additional round of questioning. You're both doing very important work and I, for one, am extremely gratified to know that you're trying to base your work on real world data and real world evaluation. So we thank you for participating and you are excused.

We'd now like to bring forward the third panel of the day. Mr. Richard Strauss, who is NADA Director for Virginia; Mr. Edward David Haddad, Haddad's Incorporated, representing the Service Station Dealers of America; Mr. Aaron Lowe, representing the Automotive Parts and Accessories Association; and, Mr. William Berman or Mr. Ted Leonard——

Mr. LEONARD. Ted Leonard.

Mr. BARTON. Ted Leonard, representing the American Automobile Association. If you gentlemen would come forward. We also have Mr. Jim Daskal, who is with Mr. Haddad. Is that correct?

Mr. DASKAL. Yes, sir.

Mr. BARTON. I think each of you gentlemen are aware that this is an investigative subcommittee. As such, we make it a practice to ask you to testify under oath. Do any of you have objections to testifying under oath?

[Chorus of no's.]

Mr. BARTON. I think you are also aware that the rules of the House and the rules of the committee allow you to have counsel. Do any of you wish to have counsel with you?

Mr. HADDAD. From time to time, Jim is going to help me.

Mr. BARTON. So you are an attorney——

Mr. DASKAL. Yes.

Mr. BARTON. [continuing] of record in, I guess, the District of Columbia or at least the State of Virginia or Maryland.

Mr. DASKAL. All three.

Mr. BARTON. All three. Okay.

Mr. STRAUSS. Mr. Barton, I also have Doug Greenhouse, from NADA, who would be at my back.

Mr. BARTON. We don't anticipate asking any questions that you're going to have to have counsel's advice for, but if you have counsel, that's to be commended.

Mr. HADDAD. I have the misfortune of having an economics degree, as well.

Mr. BARTON. Well, Senator Gramm and Congressman Armey would appreciate that. If you'll rise, then, gentlemen, to be sworn in.

[Witnesses sworn.]

Mr. BARTON. Be seated. I believe we will just start to my left. Mr. Strauss, you will be recognized for a 5-minute opening statement.

TESTIMONY OF RICHARD E. STRAUSS, DIRECTOR, VIRGINIA NATIONAL AUTOMOBILE DEALERS ASSOCIATION; EDWARD DAVID HADDAD, ON BEHALF OF SERVICE STATION DEALERS OF AMERICA, ACCOMPANIED BY JIM DASKAL, COUNSEL; AARON M. LOWE, DIRECTOR, LEGISLATIVE AND REGULATORY AFFAIRS, AUTOMOTIVE PARTS AND ACCESSORIES ASSOCIATION, INC.; AND TED LEONARD, GENERAL MANAGER, PENNSYLVANIA AAA FEDERATION

Mr. STRAUSS. Mr. Chairman and members of the committee, my name is Dick Strauss and I'm a Ford-Isuzu-Suzuki dealer from Richmond, Virginia. I'm also the National Automobile Dealer's Association Director for the State of Virginia and a former President.

The dealers who are represented by NADA are engaged in automobile service, repair and parts sales, in addition to selling new cars and trucks. On behalf of our membership, I'd like to thank you for this opportunity to testify before you today.

NADA members are directly impacted by EPA's inspection and maintenance proposal, since many of us perform inspection service and repair emissions-related system and sell emissions parts and equipment. NADA and its dealers are committed to working with EPA to develop appropriate and reasonable performance standards and we've urged EPA to provide States with the maximum possible flexibility to adopt and enhance decentralized I/M programs.

As dealers, we understand that the most critical element to a successful I/M program is public acceptance, because even if you have a great product, it won't sell if the customers don't want it. And this is a problem. The loudest public outcry against centralized I/M testing is in those areas that have had a decentralized test and repair system in place.

Motorists object to being forced to travel long distances and wait an unreasonable amount of time in lines to get their car inspected. Instead of enhancing and improving the existing system, EPA's centralized I/M program has created new problems for motorists.

In the Clean Air Act Amendments of 1990, Congress provided States with the flexibility to adopt I/M programs key to their own circumstances and structured to achieve maximum public acceptance. Despite the latitude explicitly provided by Congress, EPA rejected a compromise plan proposed by Virginia's Governor George Allen. We believe this rejection was unreasonable. Virginia recog-

nized that its existing system could be improved and agreed to take the necessary steps to enhance the program.

Under its plan, Virginia's enhanced test and repair program would have continued to allow service stations, private garages and auto dealers to conduct emissions inspections and perform repairs under the same roof. Program inspectors would be required to undergo extensive training and certification and there would be strict program audits and oversight.

Virginia's plan is consistent with NADA's position. While EPA has expressed concern regarding the past performance of Virginia's program, there are clearly viable alternatives to an outright ban on the citizen-accepted facilities that both test and repair vehicle emission systems.

EPA should obviously consider decentralized programs which are electronically connected, which involve sophisticated computer systems, like the Bar 90, and which entail strict licensing systems to be eligible for equivalent effectiveness status. Virginia's plan would have met each of these criteria.

As is the case in a number of other non-attainment areas around the country, centralized I/M preference does not make sense in northern Virginia. The existing network of decentralized programs operated by dealerships and other vehicle maintenance facilities are much more convenient and involve far superior pre and post-inspection and repair efficiencies.

From an automobile dealer point of view, a centralized program can cause a number of problems. The IM240 equipment required to be used at centralized testing facilities is far too sophisticated and expensive to be economically practical for dealers to purchase. Therefore, when a customer fails a centralized State test and comes to the dealership for repairs, we cannot adequately test to determine if that repair will allow the vehicle to pass a retest. If a customer is required to go back to the testing facility, stand in line and then fails a retest, the dealer is in trouble.

Any explanation that we offer is clearly going to be inadequate to storm the level of frustration and aggravation that this citizen will experience. It's my understanding that this is exactly what is happening to many of our fellow dealers in Arizona. Dealer customers have expressed enormous dissatisfaction when their vehicles did not pass a retest. The dealer finds himself in a box because even his best effort at repair may not be enough.

Under a centralized testing program, dealers will also have significant problems with their used cars. Some States will require dealers to take each of their used cars to a testing facility and obtain a certificate that it's passed inspection before they can sell this car. When a dealer is taking a car in trade, it is clearly impractical to have it inspected before the deal is consummated. This means the dealer is essentially buying a pig in the poke and will be unable to determine if he has to do extensive emission control repairs until after he owns the car.

Under a decentralized system, the dealer can quickly test the car on premises and correctly value the vehicle. The basic problem in Virginia and elsewhere, as I understand it, is that the EPA has established an arbitrary 50 percent credit penalty for any decentralized I/M program. Thus, it effectively becomes impossible for a

State like Virginia, which has an existing network of testing facilities in place, to improve and enhance that system.

This is true even if the enhanced decentralized system is effective, less costly and more convenient than a centralized system. It is becoming increasingly clear that the imposition of EPA mandated centralized testing programs is not a wise approach in many non-attainment areas. While such a program may work in some localities, it seems apparent that the differing circumstances in each area require that States be given maximum flexibility to structure different, but effective testing systems designed to minimize program implementation concerns.

Mr. Chairman, thank you for giving me the opportunity to express these views quickly and briefly. We stand ready to answer any questions you might have.

[The prepared statement of Richard E. Strauss follows:]

STATEMENT OF RICHARD E. STRAUSS, ON BEHALF OF THE NATIONAL AUTOMOBILE DEALERS ASSOCIATION

Mr. Chairman and Members of the Committee: My name is Richard Strauss and I am a Ford-Isuzu-Suzuki dealer from Richmond, Virginia. I am also the National Automobile Dealers Association (NADA) director for the State of Virginia. NADA is a national trade association representing over 19,000 franchised new car and truck dealers holding more than 35,000 separate franchises. The primary business of NADA members is the retail sale of new and used motor vehicles, both foreign and domestically produced. They are also engaged in automobile service, repair and parts sales. On behalf of our entire membership, I would like to thank you for this opportunity to testify before you today on EPA's vehicle emission Inspection and Maintenance program.

NADA members are directly impacted by EPA's inspection and maintenance (I/M) proposal since many of us perform inspections, service and repair emissions-related systems, and sell emissions parts and equipment. Dealers share the goal of achieving strong, well-administered I/M programs that will make an important contribution to air quality. NADA is committed to working with EPA to develop appropriate and reasonable performance standards, and has urged EPA to provide states with the maximum possible flexibility to adopt an "enhanced" decentralized I/M programs.

As dealers, we understand that the most critical element to a successful I/M program is public acceptance. Dealing with automotive consumers is our business. Even if you think you have a great product, it won't sell if the customer doesn't want it. This is the problem we have run into with the centralized enhanced I/M plan the EPA wants to implement in Northern Virginia.

We have observed that throughout the country the loudest public outcry against centralized I/M testing is in those areas that have had a decentralized test and repair system in place. Motorists object to being forced to travel long distances and wait an unreasonable amount of time in lines to get their car inspected. Instead of enhancing and improving an existing system, EPA's centralized I/M program has created new problems for motorists.

In the Clean Air Act Amendments of 1990, Congress provided states with the flexibility to adopt I/M programs keyed to their own circumstances and structured to achieve maximum public acceptance. Despite the latitude explicitly provided by Congress, EPA rejected a compromise plan proposed by Virginia Governor George Allen.

Let me explain why we believe this rejection was unreasonable. Virginia recognized that its existing system could be improved and agreed to take necessary steps to enhance the program. Under its plan, Virginia's enhanced test and repair program would have continued to allow service stations, private garages and auto dealers to conduct emissions inspections and perform repairs under the same roof. To ensure protection, program inspectors would be required to undergo extensive training and certification and there would be strict program audits and oversight.

Virginia's plan is consistent with NADA's position. While EPA has expressed concern regarding the past performance of Virginia's program, there are clearly viable alternatives to an outright ban on the citizen-accepted facilities that both test and repair vehicle emission systems. EPA should obviously consider decentralized pro-

grams which are electronically connected, which involve sophisticated computer systems (e.g. Bar 90), and which entail strict licensing systems to be eligible for "equivalent effectiveness" status. Virginia's plan would meet each of these criterion.

As is the case in a number of other non-attainment areas around the country, centralized I/M preference does not make sense in Northern Virginia. The existing network of decentralized programs operated by dealerships and other vehicle maintenance facilities are more convenient, and involve far superior pre- and post inspection repair efficiencies.

From an automobile dealer point of view, a centralized program can cause a number of problems. The I/M 240 equipment required to be used at centralized testing facilities is too sophisticated and expensive to be economically practical for dealers to purchase. Therefore, when a customer fails a centralized state test and comes to the dealership for repair, we cannot adequately test to determine if the repair will allow the vehicle to pass a retest. Let me tell you, if a customer is required to go back to the testing facility, stand in line again and then fails a retest, a dealer is in trouble. Any explanation that we offer is clearly going to be inadequate to stem the level of frustration this citizen is experiencing.

It is my understanding that this is exactly what is happening to many of my fellow dealers in Arizona. Dealer customers, in many cases longtime customers, have expressed enormous dissatisfaction when their vehicles did not pass a retest. The dealer is in a box. Even his best effort at repair may not be enough.

Under a centralized testing program, dealers will also have significant problems with their used cars. Some states will require dealers to take each of their used cars to a testing facility and obtain a certificate that it has passed inspection before they can sell the car. When a dealer is taking a car in trade, it is clearly impractical to have it inspected before the deal is consummated. This means the dealer is essentially buying a "pig-in-a-poke" and will be unable to determine if he has to do extensive emission control repairs until after he owns the car. Under a decentralized system, the dealer can quickly test the car "on premises" and correctly value the vehicle.

The basic problem in Virginia, and elsewhere, as I understand it, is that EPA has established an arbitrary 50 percent credit penalty for any decentralized I/M program. Thus, it effectively becomes impossible for a state like Virginia, which has an existing network of testing facilities in place, to improve and enhance that system. This is true even if the enhanced decentralized system is effective, less costly, and more convenient than a centralized system.

It is becoming increasingly clear that the imposition of EPA mandated centralized testing programs is not a wise approach in many nonattainment areas. While such a program may work in some localities, it seems apparent that the differing circumstances in each area requires that states be given maximum flexibility to structure different, but effective, testing systems designed to minimize program implementation concerns.

Mr. Chairman, thank you once again for giving me the opportunity to express the views of NADA on this matter.

Mr. BARTON. Thank you. We'd now recognize Mr. Haddad.

TESTIMONY OF EDWARD DAVID HADDAD

Mr. HADDAD. Mr. Chairman, Mr. Bliley, members of the subcommittee, my name is Edward David Haddad and I am an Amoco dealer in the garden spot of America, Pittsburgh, Pennsylvania. And I'm sorry Mr. Klink isn't here to hear me say that.

Mr. BARTON. We will so notify him that you said it on the record.

Mr. HADDAD. Thank you. Thousands of my fellow small businessmen and women will be seriously harmed if EPA is permitted to impose the wills of a handful of radical staffers on the States. California would see 1,300 small businesses close. SSDA has always supported innovative, enhanced I/M, as we testified to before this committee during the debate in the 1990 Clean Air Act Amendments.

I/M must have public acceptance and we cannot forget the M in I/M. EPA's program does not pass the smell test and the public sees it as more lack of common sense from Washington. EPA tries

to blame Congress by claiming that Congress mandated the IM240 in 1990, even though the IM240 did not exist at that time.

The public was outraged when they found out that the EPA test costs up to $300,000 per lane, imposes marginal cost of $12,000 per ton of emission reduction, can be beat, and that EPA admitted in court that the IM240 testing provides no benefit for cars 6 years and older.

Why are we spending all this money to test newer cars? The public wants convenience and they get mad when EPA officials, like Gene Tierney, make what some people claim—that the claims such as in California, where they claim replacing a network of 8,000 facilities with 100 IM240 centralized stations and forcing 5.5 million cars in southern California into 47 stations, and they say that would be more convenient for the consumers.

In Pennsylvania, we have 3,524 testing stations in 11 counties today. They want those replaced by 86 stations in 25 counties and, in EPA's speak, would be more convenient for the consumer. Whatever happened to common sense? You won't find it at our out-of-touch EPA. Administrator Nichols was quoted in a BNA report hailing the successful rollout of IM240 in Texas and Maryland. Yet, on the same day, the headline of the Capitol newspaper in Annapolis was "Angry Crowd Protests New Emissions Test." Maryland and Texas have since suspended their programs.

We're here because of the actions of an I/M ruling clique of a handful of unelected, unaccountable and arrogant EPA staffers, one of whom has now been employed by Envirotest. This committee wrote a law that said States would have flexibility to design fair and reasonable programs for the affected consumer. Before the elections on November 8, the EPA ruling clique allowed the States zero flexibility. The ex-coach of the Cowboys, Jimmy Johnson, used to say "If you're going to talk the talk, you have to walk the walk." EPA now talks the flexibility talk, but they do not walk the walk.

Just look at their new briefing book. EPA claims it has reached agreements with States in 61 of 65 air issues in 1 day. The final four include the 50 percent emissions credit reduction penalty, which the EPA ruling clique hopes to use to ride out the current storm of public protests, and then impose centralized IM240.

The GAO has told this committee that this bogus credit reduction is the only reason many States would have and have gone to the centralized IM240.

Mr. BARTON. If you could summarize. Your time has expired, but we are going to let you finish. Just try to brief.

Mr. HADDAD. I'll be very short. Thank you. SSDA's position is that over the next 2 years, we should not trust the EPA labs. Rather, we should trust the laboratories of democracy, the States, to do an I/M shoot and then determine what credit should be given based on real world data, not the EPA models which reflect the adage "garbage in, garbage out." This data should be presented in the form of a study conducted not by the EPA, but by another entity such as the GAO or the Office of Technology Assessment and reported back to this committee, and give the States the time and flexibility to incorporate these results.

We also need to improve repair efficiency by more and better training. The Service Station Dealers of America want strong I/M

programs because as parents and grandparents and family people, we want our children to grow up in a healthy atmosphere. We want the States to decide what system, centralized or decentralized, that they want. There is room for both and unlike the other side, we want competition, not a government mandated monopoly.

Thank you, Mr. Chairman, for permitting me this opportunity.

[The prepared statements and attachments of Edward David Haddad and the Service Station Dealers of America follow:]

STATEMENT OF DAVID HADDAD, PAST PRESIDENT, SERVICE STATION DEALERS OF AMERICA

Mr. Chairman, Members of the Subcommittee: I am Dave Haddad, an Amoco dealer in the garden spot of America, Pittsburgh, and past president of the Service Station Dealers of America.

Thousands of my fellow small businessmen and women will be seriously harmed if EPA is permitted to impose the wills of a handful of radical staffers on the states.

SSDA has always supported innovative, enhanced I/M; as we testified to before this committee during the debate over the 1990 Clean Air Act Amendments.

As Mr. Dingell has long told EPA, I/M must have public acceptance; or else all I/M programs will continue to fall short of their goals.

EPA's program does not pass the "smell test", and the public sees it as more lack of common sense from Washington. EPA tries to blame Congress by claiming that Congress mandated I/M 240 in 1990; even though I/M 240 did not exist at that time.

The public got mad when they found out that the EPA test: (1) cost up to $300,000/lane, (2) imposes marginal cost of $12,000/ton of emission reduction and (3) that EPA admitted in court that I/M 240 testing provides "no benefit for cars 6 years and older."

Why are we spending all this money to test newer cars?

The public wants convenience, and they get mad when EPA officials like Gene Tierney make dumb claims such as in California where they claim replacing a network of 8000 facilities with 100 I/M 240 centralized stations; and forcing 5.5. million cars in southern California into 47 stations—would be more convenient for consumers.

In Pennsylvania, 3524 testing stations in 11 counties would be replaced by 86 stations in 25 counties, and in "EPASPEAK" would be more convenient for the consumer.

Whatever happened to common sense?

You won't find it at our out of touch EPA.

Carol Browner said this is the "most consumer friendly" program EPA ever designed. Last week on C-SPAN, the Speaker of the Maine House told her it was so consumer friendly that a ballot initiative to repeal I/M 240 would pass by a wide margin.

Mary Nichols was quoted in "BNA Report" hailing the successful rollout of I/M 240 in Texas and Maryland, yet, on the same day the headline of the Capitol newspaper in Annapolis was "angry crowd protests new emissions test." Maryland and Texas have since suspended their programs.

Phil Lorany of EPA has run around claiming Arizona motorists wait 5 minutes for a centralized test. Barry Goldwater is quoted in the paper saying how dumb it is to wait an hour and a half in 110 degree weather for a useless Washington mandated test.

We are here today not because of what this committee did in 1990, we are here because of the actions of an I/M ruling clique of a handful of unelected, unaccountable and arrogant EPA staffers, one of whom has now been employed by Envirotest; and who should be required to personally testify under oath before this committee and produce their records, not hide behind Carol Browner, who has been poorly served.

These hypocrites use a phone poll conducted by the centralized testers to charge us with conflicts of interest, while these same staffers hold seminars at lavish resorts funded by their centralized contracts and programs.

This committee wrote a law that said states would have flexibility to design fair and reasonable programs for the affected consumer.

Before the elections on November 8, the EPA ruling clique allowed the states zero flexibility: it was centralized I/M 240 or sanctions.

The ex-coach of the Cowboys, Jimmy Johnson used to say "If you're going to talk the talk, you have to walk the walk".

EPA now talks the flexibility talk, but they do not walk the walk.

EPA claims it reached agreements with states on 61 of 65 air issues in one day.

The "final four", includes the 50 percent emissions credit reduction penalty, which the EPA ruling clique hopes to use to ride out the current storm of public protest, and then impose centralized I/M 240.

The GAO has told this committee that this bogus credit reduction is the only reason many states would go to centralized I/M 240.

EPA in January held a "stakeholders meeting"—which SSDA was neither informed of, nor invited to, where the ruling clique decreed that they would not reconsider the 50 percent penalty, for states that do not separate test and repair.

These are the same people who conducted a regulatory negotiation on motor fuels policy; reached agreement with us; and then broke their word with an ethanol mandate.

This action; combined with the actions of the I/M clique shows that EPA cannot be trusted to revise the regulations—more direction from Congress is necessary.

SSDA's position is that over the next 2 years; we should not trust the EPA labs; rather we should trust the laboratories of democracy, the states, to do an I/M shootout, and then determine what credits should be given based on real world data; not the EPA models which reflect the adage "garbage in, garbage out".

This data should be presented in the form of a study conducted not by EPA, but by another entity such as the GAO, or the Office of Technology Assessment, and reported back to this committee, and give states the time and flexibility to incorporate these results.

EPA will do or say anything to get states to adopt their I/M invention.

States should not be subject to sanctions threats, so long as they are engaged in good faith efforts to determine how to best implement an enhanced I/M program that is cost effective and convenient for the consumer.

SSDA wants strong I/M programs; because as parents and grandparents, and family people, we want our children to grow up in a healthy atmosphere. We want the states to decide what system, centralized or decentralized that they want. There is room for both, and unlike the other side, we want competition, not a government mandated monopoly.

Enhanced Inspection/Maintenance

Phil Lorang

U.S. EPA

1990 Clean Air Act

>> Specific Control Requirements

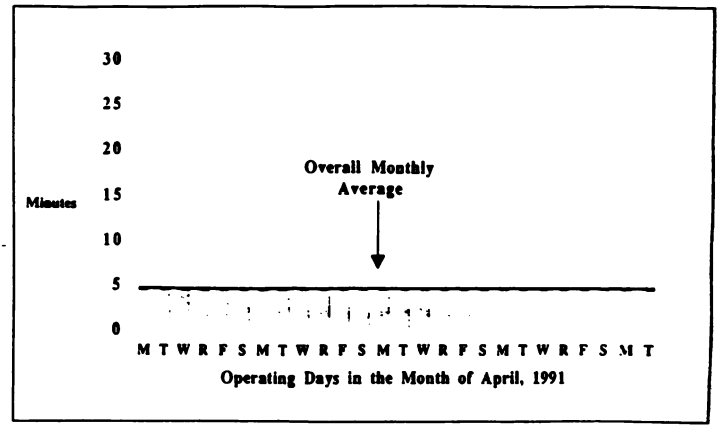
- I/M
- New Cars
- New Fuels
- Industry

>> Emission Reduction Targets

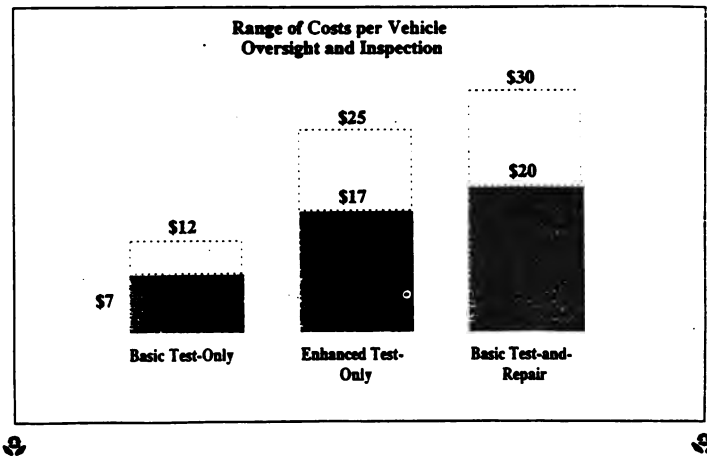
- 15% by 1996
- 3% per year after 1996
- Eventual Attainment

>> Nondiscretionary Sanctions and Federal Take-Over if State Fails

ARIZONA MOTORISTS WAIT 5 MINUTES OR LESS



TEST-ONLY COSTS LESS



STATEMENT OF THE SERVICE STATION DEALERS OF AMERICA

I. INTRODUCTION

The Service Station Dealers of America, the trade association that serves as the voice of America's 50,000 independent gasoline dealers welcomes this hearing; into a textbook example of how entrenched, unelected, unaccountable bureaucrats can use the regulatory process to implement their own agendas, at the expense of small business and the American public.

Unaccountable bureaucrats often fall victim to an "Arrogance of Perceived Power"; and take advantage of the fact that Congress is a very busy and often overworked place; that lacks the resources to monitor their every move,

In this case, the bureaucratic excesses were exposed only because the impact of their actions affected not only industry or small business, but intruded into the lives of every citizen who drives a car in even lightly populated areas of the country.

This is a classic example of a bureaucracy inventing a program, and taking every step possible to force local governments to implement their program, even though more effective, consumer friendlier programs exist.

The Virginia experience is in many respects similar to ours in Pennsylvania, the former a case where EPA officials went so far as to make slanderous statements against prominent local small business men and women; that the previous Democratic administration had to apologize for.

EPA officials have spent much time at taxpayer expense in state capitols, hurling threats of sanctions if the states did not do I/M Washington's way. Mr. Dick Wilson said in Richmond that he would "personally see to it" that highway fund sanctions were applied immediately; if the Commonwealth did not buckle under and adopt the EPA's "Star Wars" I/M 240 system; a system suspended within a matter of hours of attempted implementation by the state of Maryland.

In addition to threats and slander; the other tactic used by EPA in the state capitols was to "blame it on Congress". EPA made the incredible claim that the Congress in 1990 which had never even heard of I/M 240; had somehow mandated that system.

While hurling insults, threats, and misinformation EPA failed to disclose either to the Commonwealth or to the Congress two critical facts: (1) The major emission reductions from enhanced I&M stem from pressure and purge testing of the existing evaporative emission system emission control for the first time, not from I/M 240. This testing can be done in many more cost effective ways than I/M 240. (2) EPA admitted in federal court that there is no benefit from I/M 240 testing on cars 6 years or older, which are believed to be the major source of the emissions I/M seeks to control.

While many other abuses can be cited; the key question is where do we go from here to insure that fair, reasonable and effective I/M programs for the affected consumer are put into place.

Congress told EPA to put out a guidance document; and instead we received, over a year late, a rule that EPA attempted to manipulate into requiring a system no one on the Hill had ever supported.

Now these regulatory foxes want us to trust them to guard the public chickenhouse.

Revised I/M regulations must be subjected to economic analysis done by an arm of the government other than the EPA.

In this case, the EPA economic "analysis", the absolute worst analysis we have ever seen in any rulemaking we have participated in; was performed by the same staffer who oversaw the contriving of the I/M 240 system.

While the EPA inventors of I/M 240 claim it is the most cost effective air pollution reduction program available; at about $1000/ton of VOC reduction, analysis by states and independent think tanks tell a different story, showing that I/M 240 imposes marginal costs of $12,000/ ton over other methods of enhancing I/M.

This rule has done more to undermine public support for the Clean Air Act Amendments of 1990 than anything else; and those of us who remember what a difficult process enacting that bill was; and do not want to see a wholesale reopening of the Act; must recognize that EPA's outrageous conduct has created a wedge issue that may do just that.

This program represents one of the largest interfaces between the public at large and control strategies aimed at cleaning the air. It directly affects tens of millions of motorists and their automobiles, as they must have the cars inspected, or lose their vehicle registration.

The members of the SSDA, particularly in states such as California, derive a substantial part of their revenues from current I/M programs, and employ tens of thousands of inspectors whose jobs are at stake.

In today's highly competitive gasoline market; a dealer must have a strong ancillary business; such as testing and repairing cars, in order to survive.

The rule directly affects people in 21 states, including California, New York, Texas, Pennsylvania, and New Jersey; however, EPA has attempted to pressure other states such as Michigan and North Carolina into adopting I/M 240.

In order to see just how outrageous EPA's actions have been, an understanding of how we got to where we are is needed.

II. BACKGROUND OF THE I/M RULE

Motor vehicle inspection and maintenance programs were first required by the Clean Air Act Amendments of 1977. Between 1977 and the debate over the Clean Air Act Amendments of 1990, all I/M programs, centralized or decentralized were falling far short of their emission reduction goals.

Well publicized problems existed in centralized programs, which EPA now assumes to be nearly perfect, existed to various degrees in numerous areas, including right here in the District of Columbia.

As stated by General Motors in testimony before the Subcommittee on Health and Environment of the House Energy and Commerce Committee:

> Current I/M programs in some states certainly do not work well. Many vehicles (30 to 70 percent of failing vehicles in some samples) may be falsely identified as failing an I/M test due to inadequate vehicle preconditioning prior to testing. The owners of such vehicles are then inconvenienced because they are required to seek unnecessary repairs. Even when I/M tests are correctly identifying gross emitting vehicles, the effectiveness of this program can be compromised by low repair-cost waivers that some states allow.
>
> Some states even exempt the oldest vehicles—which are often the ones most in need of inspection and repair—from any I/M coverage.
>
> The upshot is I/M programs have become a patchwork of programs that are sometimes overinclusive, sometimes underinclusive and sometimes both. House Hearings of May 24, 1989, Serial No.101-101 at 505, 506.

The point here is that Congress was aware that I/M programs, centralized or decentralized were not achieving their goals, thus, enhancements were necessary.

During the time period from 1977 to 1989, many I/M programs, particularly decentralized programs, often used manual emission analyzers, which were prone to miscalibration even by the honest and competent people who constitute 99.9 percent of the service station and auto repair industry today.

In enacting the I/M provisions of the Clean Air Act, Congress specified solutions to resolve the problems found in both types of networks, and did not intend for EPA to ignore what it said, or to weave its way around statutory commands by adopting new definitions.

Further, Congress would never buy into the "Perfection Assumption" that underlies the credit reduction scheme in the EPA's models.

SSDA was actively involved in the negotiations that lead to the I&M provisions that were adopted in the 1990 Clean Air Act Amendments.

At that time, the state of the art in I/M technology was the new "Bureau of Automotive Repair" 1990 system, or BAR-90 system being rolled out in California. The heart of the BAR-90 system was the new 386-based computer link-up, which greatly increased quality control.

The specific requirements for enhanced programs set forth in the plain language of the statute, such as computerized testing, sound remarkably like BAR-90, and there is no mention of anything resembling what numerous states rebelling at EPA's "one size fits all I/M 240 system", in the statute.

III. THE STATUTE AND LEGISLATIVE HISTORY

In enacting the 1990 Amendments, Congress intended to have I/M systems live up to their as yet unrealized emission reduction potential.

The Act, section 182(c), specified certain elements that must be a part of each states enhanced I/M program. The statute requires that the State program shall include the following elements:

(i) Computerized emission analyzers, *including on-road testing* devices.

(ii) No waivers for vehicles and parts covered by the emission control performance warranty as provided for in section 207(b) unless a warranty remedy has been denied in writing, or for tampering-related repairs.

(iii) In view of the air quality purpose of the program, if, for any vehicle, waivers are permitted for emissions-related repairs not covered by warranty, an expenditure to qualify for the waiver of an amount of $450 or more for repairs...

(iv) Enforcement through denial of vehicle registration...

(v) Annual emission testing...unless the State demonstrates to the satisfaction of the Administrator that a biennial inspection...will result in emission reductions which equal or exceed the reductions which can be obtained through such annual inspections.

(vi) Operation of the program on a centralized basis, unless the State demonstrates to the satisfaction of the Administrator that a decentralized program will be equally effective. An electronically connected testing system, a licensing system, or other measures (or any combination thereof) may be considered, in accordance with the criteria established by the Administrator, as equally effective for such purposes.

(vii) Inspection of emission control diagnostic systems....

The battle over this provision was fought in the House, and this Committee specifically.

Equipment manufacturers and centralized system operators attempted to mandate in the Act a centralized-only regime, and to do away with any state flexibility in the plain language of the statute. They failed.

Only EPA accepts the notion that centralized systems are vastly superior to decentralized, and we have the shining example of the system here in Washington, D.C. to bring the point home.

Thus, the plain language of the statute provides that "An electronically connected testing system, a licensing system, or other measures (or any combination thereof) may be considered, in accordance with the criteria established by the Administrator, as equally effective for such purposes."

This Committee directed EPA in the legislative history that: "The Administrator must establish criteria under which decentralized systems may be considered equally effective (to centralized systems)." House Report 101-490, part 1, p. 240 (May 17, 1990), reprinted in 1990 U.S.C.C. Ad. News. 3654.

EPA has attempted to dance around the statutory requirements, by redefining what Congress considered to be a centralized system i.e. the non-existent "decentralized test only" as the statutorily mandated decentralized (test and repair) program.

EPA admits that the statute requires them to allow for what Congress intended when it used the term "decentralized"; as the I/M rule, found in the Federal Register of November 5, 1992, 57 Fed. Reg. at p. 52959 states:

"On the other hand, section 182 (c) of the Clean Air Act allows a state to make a demonstration that a decentralized (i.e. test and repair) program is equally effective for the purposes of meeting the enhanced I&M requirement. Therefore EPA will consider SIP submissions designed to demonstrate that decentralized, test and repair programs are equally effective to a centralized program in meeting the performance standard using the criteria for case by case equivalency."

As demonstrated, infra, that case by case equivalency, as interpreted by Agency staff, is illusory, and in no way complies with the statutory mandate.

Congress commanded EPA, in the plain language of the statute, to provide state flexibility to formulate fair and reasonable programs for the affected consumer.

EPA instead took it upon itself to rewrite the statutory definitions in an effort to kill test and repair systems; and innovative technologies such as remote sensing.

IV. REWRITING THE STATUTORY DEFINITIONS

Congress used the term "decentralized" in the context of the test and repair systems that had always existed, and specified improvements to such systems in the statute itself such as use of computerized emission analyzers.

The legislative history makes this clear. For example, the Senate Report specifies that:

Because EPA has found that decentralized inspection programs using only manual analyzers are less effective than other alternatives, subject to abuse and errors, and make enforcement difficult, the bill requires inspections to be made using computerized analyzers that greatly reduce the problems associated with emissions analysis, particularly in a decentralized setting.

EPA itself, in public workshops, the notice of proposed rulemakings, and in the rule itself, uses the term "decentralized" in its well known meaning, and as Congress itself used it—to mean a test and repair system.

EPA wants to kill decentralized (test and repair) systems states that: "It was EPA's intent in deriving the test only concept that it would be very much like centralized programs today." 57 Fed. Register 52975; November 5, 1992.

Where does EPA think it gets the authority to redefine the terms centralized and decentralized, as used by this committee.

EPA has admitted that it has improperly redefined the term "decentralized".

Congress resolved the controversy between proponents of the centralized only provisions, and those favoring unlimited state discretion by the compromise embodied in the Act, that requires EPA to set forth equivalency criteria, and sets forth specific provisions to enable states that wish to provide convenient Virginia style decentralized I/M services for its motorists to do so.

Throughout the thousands of pages of testimony, the committee reports, or the floor debates there is not iota of evidence to show that Congress intended to allow the Agency to derive concepts that rewrite terms as used by Congress and that fly in the face of the carefully constructed statutory scheme.

Congress gave EPA specific directions on what it wanted in decentralized (test and repair) programs, and did not intend that the Agency could comply with non-discretionary duties by simply rewriting the terms used by Congress.

This rewriting has also been used by EPA in an effort to kill remote sensing; as they re-define the requirement of on-road testing in the Act to mean roadside dynamometer testing.

The plain language of the statute, as the Agency candidly admits in the rule, required it to set forth criteria by which a decentralized (i.e. test and repair system) system could be adopted by a state desiring to exercise the flexibility granted by Congress to do so.

As the Agency, candidly admits in the Rule: "On the other hand, section 182(c) of the Clean Air Act allows a state to make a demonstration that a decentralized (i.e. test and repair) program is equally effective for the purposes of meeting the enhanced I&M requirement."

In order to back up its redefinition scheme, EPA came up a sham equivalency demonstration scheme.

V. THE EQUIVALENCY DEMONSTRATION SHAM

EPA has published alleged "equivalency" criteria, found at 40 CFR 51.353(b).

Those criteria, provide a presumption that a decentralized test and repair system, is 50 percent less effective than a test only system.

The rule holds that states may overcome the presumption in two ways:

(1) By demonstrating that based on past performance with the specific test type and inspection standards employed, its test and repair system will exceed these levels.

The problem with this requirement is that no one, anywhere in the nation has any past performance with the specific test type and inspection standards that EPA is requiring in order to meet the performance standard.

The key point is that while Congress dictated, and the Agency acknowledged that the Act requires that states have the flexibility to adopt a decentralized, i.e. test and repair program, the Agency attempted to discharge this non-discretionary duty by having states demonstrate past performance with systems that have never existed.

The Agency continues with the sham:

(2) Areas operating test and repair or hybrid networks, may in the future, claim greater effectiveness than described in paragraph (b)(1) of this section, (the 50 percent reduction) if a demonstration of greater effectiveness is made...

This is a sham because EPA never intended to allow any state to even try such a network. EPA repeatedly told the states that it not approve any SIP; and even worse threatened them with sanctions if they even made the effort to make such a demonstration.

Since no state will not have operated an enhanced program in the past, Congress must not allow the I/M Ruling Clique to deny states the flexibility to experiment with the enhanced I/M techniques, such as on-road sensing to detect gross polluters, and demonstrate equivalency under part (2) of the rule based on real world performance of the new system.

EPA has tried very hard to kill any system other than I/M 240, which is not what Congress intended.

The hard fact of the matter is that EPA is now claiming far greater emission reduction from enhanced I/M than they testified to in 1989 and 1990.

Emissions such as "running loss" and "hot soak" emissions from sources such as evaporation from the gas tank during hot weather, or evaporation through the car-

buretor are now believed to be as important as those coming from the automobile tailpipe. See generally, Senate Report, *supra*.

These emissions are supposed to be captured by the existing charcoal canister system on automobiles. The canister system is designed to purge these vapors back into the fuel system where they are burned off.

Thus, the major "enhancement" in "enhanced" I&M is the fact that for the first time testing will be done to insure that the canister is functioning correctly, by doing pressure and purge testing on the canister.

There are many ways to do such testing; but EPA's I/M Ayatollahs see no way other than I/M 240.

This is why we have the roadblocks thrown up so far; and why EPA's last line of defense is the 50 percent credit reduction scam; which is in turn based upon the assumption that centralized systems are nearly perfect; and EPA's manipulation of covert audits.

VI. THE CREDIT REDUCTION SCAM

EPA recently told a federal court:

EPA concluded prior to the rulemaking, that overall effectiveness in reducing emissions of decentralized testing networks is 20 to 40 percent less than centralized networks.

That accurately reflects EPA's view of the comparative overall effectiveness of decentralized test and repair networks. The 50 percent credit reduction applied to the tailpipe emissions test, is not, as NADA assumes, an overall comparison of program effectiveness, but is instead a credit reduction that is applied to particular tests that are part of an enhanced I/M system. EPA brief at 78.

EPA continues to try to impose a 50 percent penalty on the states and bases it on a critical assumption: the idea that centralized systems are nearly perfect. This assumption was not made by Congress.

EPA admitted in the Regulatory Impact Analysis that "covert audits on centralized systems have not typically been done", and EPA has assumed perfection in centralized systems based on 1979 Portland Oregon study, that its brief says found no problems.

Recent studies by the state of California, and House testimony of October 29, 1993 have shown that even the best centralized systems have improper test rates of 21 to 40 percent or more.

Does anyone really think that centralized systems such as the one here in D.C. are perfect?

The idea that converting decentralized test and repair programs to centralized test only is going to be the magic bullet to make these programs work is preposterous.

For example, New York has long had a decentralized test and repair I/M program.

Under pressure from EPA; New York adopted a "fool proof" state of the art centralized system for taxi cab inspections.

That program had to be shut down due to improper testing far greater than that of the decentralized system it was supposed to replace.

If EPA is allowed to penalize decentralized test and repair systems, based on past performance, that penalty must be determined vis-a-vis the past performance of centralized systems.

Our point again is that there is no evidence whatsoever to support the idea that centralized testing is nearly perfect. Congress did not buy this argument, which is why the I/M provisions are so detailed.

Finally, any penalty must not only compare decentralized systems to real world centralized performance, the test types at issue must also be the same.

This is why SSDA strongly supports an I/M shootout over the next two years in the laboratories of democracy, the states.

EPA is chicken to do it because they know their invention, I/M 240, will not win.

EPA has gone to great lengths to avoid a shootout; telling a federal court that "there is no need to determine which program is better, because EPA has done nothing to require I/M 240."

That statement is absurd, as the Committee will hear tomorrow, and has already heard from Gov. Wilson and Allen.

EPA has gone to great lengths to trash test and repair systems through covert audits that have been rigged to favor centralized systems.

For example, it has just been revealed that EPA's claim that the Georgia program has 50 percent improper testing is based upon a ten car survey, where 5 cars passed a visual inspection that had a missing catalytic converter.

The five cars that were erroneously passed had dummy catalytic converters installed by EPA to fool the inspectors. No such cars with dummy converters were run through centralized programs; and the five cars with missing converters in Georgia were all caught.

This is the kind of garbage that EPA puts into its computer models: resulting in the garbage we get out.

EPA also tries to mislead by claiming improper testing due to minor errors, such as a clerk misreading a serial number.

Nothing has been done that would harm air quality, or pass cars that should fail, but EPA trumps it up as evidence of massive improper testing.

EPA then tries to blame this improper testing on a "conflicts of interest." Even this argument is based upon regulatory double talk.

They say we pass cars that should fail to keep customers happy—then they say we fail cars that should pass in order to generate repair business. Which is it? The answer is neither.

EPA attempts to support this charge by citing a "study by Riter Research", which was nothing more than a phone poll, by a tiny Annapolis, Md. company that may be out of business, paid for by the centralized I/M companies and their mouthpiece, the so called Coalition for Cleaner Safer Vehicles.

This poll asked a number of "Have you stopped beating your Wife" questions, such as "what did the dealer try to sell you that you didn't need", that were designed to elicit a response that there is a conflict of interest; therefore the public wants centralized systems.

If they had asked questions about convenience; and the pingpong effect; the results would have been totally different.

In any event, does anyone really believe that the public wants, indeed is clamoring for centralized I/M 240; which this poll EPA says proves there is a conflict of interest would have you believe? This is patent nonsense.

One idea that must be addressed is the idea that a car that failed an inspection at one garage, passed at another so something nefarious is going on.

Very often a car that has not been warmed up properly will fail an I/M test, then pass the next one, without anything being done to the car. This is exactly what happened when the GAO tested I/M 240 at EPA's labs.

The Dallas paper recently reported that a gentleman took a 1971 in for a centralized I/M 240 test, it failed, he drove it around the block; whereupon it passed. The attendant blamed the initial failure on the catalytic converter, which did not exist on 1971 cars, promoting the remark that the movie title "Dumb and Dumber" should be applied to the Texas I/M test.

Ironically, the same EPA people who scream conflict of interest, see nothing wrong about having retreats in Florida with centralized contractors, in order to tell states how to write contracts for these people, and the centralized companies like Envirotest have no qualms about hiring the state and EPA officials they used to lobby.

People who live in glass houses should not throw stones, particularly at hard-working small businessmen and women who earn an honest living in the rough and tumble business world, and do not need government granted monopolies.

VII. CONCLUSION

The I/M program must be overhauled pursuant to a two year shootout in the states, to be reported upon by some entity other than EPA, which cannot be trusted, back to this Committee.

Legislation is probably necessary in order to give states the flexibility they need, without fear of EPA's I/M Ayatollahs.

This can be accomplished without facing the charge of "reopening the 1990 Act" because the 1990 Act requires EPA to republish its I/M guidance and rules as new information becomes available. Congress should simply direct EPA to do what it was told to do in 1990; not implement the hidden agendas of a handful of radical unelected staffers.

In light of the strong entrenched bureaucratic opposition, States must be guaranteed the right, by statute, to design effective fair and reasonable enhanced programs for the affected consumer. Such programs must include on-road testing to detect gross emitters; and have the option of convenient testing and repair at the same facility. As evidenced by the reaction of people across America, consumers want such convenience. The reaction of the people shows the bias and intellectual bankruptcy of a single biased poll done by centralized proponents several years ago relied upon by EPA.

Recent announcements of flexibility appear to be a smokescreen designed to deflect Congressional action; and ride out a wave of opposition from states and citizens; who have now seen the violence the "one size fits all" EPA staff mandate system does to the statutory requirement that EPA give states flexibility to design fair and reasonable programs for the affected consumer.

While EPA sent out "flexibility guidelines" on December 29; on December 30 Air Administrator Mary Nichols wrote to the state of California saying that EPA would not reconsider the 50 percent emission reduction credit for decentralized systems; that as the GAO testified before the House Commerce Committee on October 29, 1993 was not only not supported by the evidence; it was the only reason that states would adopt the EPA preferred system; or abandon a decentralized system.

California testing is showing I/M 240 "Superiority" is a fraud.

In tests of 150 cars (versus the 10 cars tested by EPA); ASM showed greater emission reduction, after repair than I/M 240 and repair grade I/M 240.

Results as of November 18, 1994 showed 24 percent HC reduction versus 22 percent for I/M 240; 18 percent CO reduction versus 10 percent for I/M 240, and most tellingly, ASM testing shows a 26 percent reduction in NO_x versus 14 percent for I/M 240—while NO_x reduction is supposed to be the great advantage of I/M 240.

Nevertheless, EPA continues to promote the "I/M 240" system invented by them; and to claim that Congress wanted to force I/M 240 testing on the states, despite the fact that I/M 240 existed only in the minds of the EPA staff, and was never mentioned in the history of the 1990 Clean Air Act; much less the statute itself.

EPA staff has publicly stated, on videotape that this and other state generated data should be ignored because it is "politically motivated". These people should be hauled in before this Committee; and forced to defend their actions and freedom from these I/M ayatollahs should be given back to the states and the people.

EXCERPTS FROM THE EPA COURT BRIEF DATED FEBRUARY 1, 1994

EPA set the performance standard based on the application of the I/M 240 test to newer technology vehicles because there was insufficient evidence of any benefit to be derived from using I/M 240 on older-technology vehicles to justify imposition of this test requirement. 7 Fed. Reg. 52979. Given the substantial cost of high-technology test equipment (approximately $140,000 per lane versus $15,000 to $40,000 for the idle test equipment), the need to provide states with flexibility, and the minimal added benefit such testing would provide for older cars, EPA concluded that it was not reasonable to set a performance standard based on broader I/M 240 coverage. 57 Fed. Reg. 52979; AR Doc. V-C-1 at 4, JA 848.

EPA concluded prior to the rulemaking that the overall effectiveness in reducing emissions of decentralized testing networks is 20 percent to 40 percent less than centralized networks. AR Doc. II-A-4 at page i, JA 100. That accurately reflects EPA's view of the comparative overall effectiveness of decentralized test-and-repair networks.

It is therefore not necessary for the Court to decide which test is better, since EPA has not taken any action that precludes a state from adopting a test procedure other than I/M 240.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,
Springfield, IL, February 26, 1992.

Mr. Morton J. Getman,
Executive Director,
S.A.V.E.R.,
166 Washington Avenue,
Albany, NY

Dear Mr. Getman: The Illinois Environmental Protection Agency has serious questions concerning the technical feasibility and cost effectiveness of the I/M 240 emissions test. Attached is a copy of a letter the Agency sent to U.S. EPA after the March, 1991 workshop and a listing of our questions and concerns provided to the National Governors' Conference for transmittal on to U.S. EPA headquarters.

As you can see, our issue is not the question of "centralized" vs. "decentralized" inspection and maintenance. The problem we see with the I/M 240 concept is that we basically do not accept their presentations on cost effectiveness and we question their presentations on feasibility of the entire concept.

On March 5 and 6, 1992, I plan to be in Ann Arbor with U.S. EPA. As you probably know, there will be a workshop on the Mobile 5.0 model on March 5. On March

6, a member of my staff and I will meet with Gene Tierney and his associate regarding the above list of questions and concerns pertaining to I/M 240.

Since both S.A.V.E.R. and our Agency seems to be concerned with I/M 240, I was wondering if there would be any way to meet, either before or soon after our meeting with U.S. EPA, with your technical support staff to focus on alternatives to IM 240 which would be less costly but just as effective and represent proven technology.

Sincerely,

THOMAS R. WALLIN, *Program Manager, Vehicle Emission Test Program.*

BETTER EVIDENCE SHOWS THAT EPA IS WRONG

Over a decade decentralized programs have performed as good as centralized.

In a nutshell, what are the results of this study?

Answer: Both CO and Ozone emissions across America have been reduced at a dramatic rate over the past decade—23 percent for Ozone and 36 percent plus for CO. There is no statistically significant difference between the effectiveness of centralized and decentralized programs in reducing CO and Ozone pollution.

Back about 1991 EPA's Eugene Tierney started making the claim that decentralized emissions testing programs in centralized states were twice as effective as decentralized programs. However we've located a report authored by Tierney himself published in January of 1991. On page 26 of this report, entitled I/M Network Type: Effects on Emission Reduction, Cost, and Convenience, Tierney states "Covert audits have not typically been done in centralized systems". In other words, he was making a claim comparing the two systems while he had hardly even audited centralized programs.

While Tierney looks at a few covert audit reports which the October GAO report termed as lacking quantitative sufficiency, I decided to check on the "ultimate indicator"—the air—to see how fast centralized programs reduced air pollution compared to decentralized programs. My first report studied Carbon Monoxide instrumented readings (EPA's data) for as many regions for which I could find data, I compared the reductions in CO parts per mission for both centralized and decentralized regions for the years 1986 and 1991. Then I plotted the reduced CO levels for both centralized and decentralized regions, averaged the differences and then compared them. The data showed that, over a full decade, the air in the decentralized programs experienced reduced CO levels at a faster rate then in centralized regions. This new study has widened the years included in the study to ten years and has added ozone to the study.

Findings of carbon monoxide and ozone levels:

My premise has been that the "ultimate indicator" of a program's effectiveness is how well the air is being cleaned up. And since the goal is to clean the air, then isn't the examination of the air and reductions in pollution the best if not the only true indicator of a programs effectiveness?

NO SIGNIFICANT DIFFERENCE!!

DECENTRALIZED REGIONS experienced an Ozone reduction of 23.3% ('83 to '93).
CENTRALIZED REGIONS experienced an Ozone reduction of 24.6% ('83 to '93).

** This data shows remarkable Ozone reductions over the past decade! **

** !!! These figures are about what really matters, cleaning up THE AIR ... They show EPA's claim that centralized regions do a far better job than decentralized regions is a totally false claim!!! **

DECENTRALIZED REGIONS - page 1

Region	1983 Ozone ppm	1993 Ozone ppm	Difference ppm	% Difference
New York, NY	.19	.12	.07	36%
Los Angeles-Long Beach, CA	.37	.29	.08	21%
Philadelphia, PA/NJ	.19	.13	.06	36%
Detroit, MI	.14	.11	.03	21%
Houston, TX	.28	.20	.08	28%
Boston, MA	.18	.11	.07	38%
Nassau-Suffolk, NY	.17	.13	.04	23%
St. Louis, MO/IL	.18	.13	.05	27%
Atlanta, GA	.17	.13	.04	23%
Oakland, CA	.17	.11	.06	35%
Cleveland, OH	.15	.14	.01	6%
Riverside-San Bernardino, CA	.34	.26	.08	23%
Denver, CO	.14	.10	.04	35%
San Francisco, CA	.14	.07	.07	50%
Kansas City, MO/KS	.13	.10	.03	23%
Cincinnati, OH	.15	.10	.05	33%
Dallas, TX	.16	.14	.02	12%
Pittsburgh, PA	.14	.10	.04	28%
Anaheim-Santa Ana, CA	.28	.19	.09	32%
San Diego, CA	.20	.16	.04	20%
Ft. Lauderdale/Hollywood/ Pompano Beach, FL	.11	.11	.00	0%
Charlotte-Gastonia, Rock Hill NC/SC	.15	.10	.05	33%
Salt Lake City, UT	.14	.10	.04	28%

NO SIGNIFICANT DIFFERENCE!!

DECENTRALIZED REGIONS experienced an Ozone reduction of 23.3% ('83 to '93).
CENTRALIZED REGIONS experienced an Ozone reduction of 24.6% ('83 to '93).

** This data shows remarkable Ozone reductions over the past decade! **

** !!! These figures are about what really matters, cleaning up THE AIR ... They show EPA's claim that centralized regions do a far better job than decentralized regions is a totally false claim!!! **

CENTRALIZED REGIONS

Region	1983 Ozone Avg	1992 Ozone Avg	Difference Avg	% Difference
Chicago, IL	.17	.13	.04	23%
Washington, DC/MD	.17	.12	.05	29%
Minneapolis-St. Paul, MN/WI	.13	.09	.04	30%
Baltimore	.17	.13	.04	23%
Tampa-St. Pete-Clearwater, FL	.14	.11	.03	21%
Phoenix, AZ	.16	.12	.04	25%
Seattle, WA	.10	.10	.00	0%
Louisville, KY	.16	.11	.05	31%
Memphis, TN	.15	.12	.03	20%
Orlando, FL	.11	.10	.01	9%
Jacksonville, FL	.14	.10	.04	29%
Hartford, CT	.19	.13	.06	31%
Gary/Hammond, IN	.17	.12	.05	29%
Tucson, AZ	.11	.10	.01	9%
Knoxville, TN	.11	.10	.01	9%
Wilmington, DE	.18	.12	.06	34%
Tacoma, WA	.10	.10	.00	0%
New Haven-Meriden, CT	.22	.12	.10	45%
AVERAGES	.1489 ppm	.1122 ppm	.0367 ppm	24.62% Reduction

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY,
Sacramento, CA, April 22, 1993.

The Honorable Frederico Pena,
Secretary, U.S. Department of Transportation,
400 Seventh Street, S.W.,
Washington, D.C.

The Honorable Carol M. Browner,
Administrator, U.S. Environmental Protection Agency,
401 M Street, S.W.,
Washington, D.C.

DEAR SECRETARY PENA AND ADMINISTRATOR BROWNER: Governor Pete Wilson received your letter last week which threatens the State of California with Federal highway funding sanctions and economic growth restrictions if the State fails to enact legislation authorizing an enhanced vehicle emission inspection and maintenance program in the rigid "one size fits all" form prescribed by EPA staff. He has asked us to respond to you.

Clearly, the economic challenges now facing California and the rest of the nation call for creative, results-oriented programs to prevent air pollution. We write to enlist your support in revising the inflexible, anti-free market positions taken by the Department of Transportation and the Environmental Protection Agency on this issue.

No one can question California's commitment to cleaning up our air. We have the most advanced and effective air pollution control programs in the nation. Californians drive cars equipped with the most stringent emissions technology in the country, and we buy the nation's cleanest fuels. Our programs to reduce emissions from stationary industrial source are second to none. Californians lead the nation in designing and implementing programs to clean our air. Indeed, the emissions reduction programs we have pioneered, and their resulting technologies, now form the backbone of the federal Clean Air Act—legislation which the Governor strongly supported as a United States Senator and which the entire Wilson Administration supports.

As such, we are committed to making our vehicle inspection program, which we call "smog check," as effective as the other air pollution programs we have pioneered. In doing so, however, we must take into account the current economic problems California faces. No other states has felt the ravages of the economic recession as severely as California. We have lost over 800,000 jobs since 1990, mainly due to the national recession and cutbacks in defense spending. More military bases are being closed in California than in any other state; the latest round of proposed closures could cost California an additional 140,000 jobs. Californians are reeling from the impact of unfunded federally-mandated programs, record rates of immigration, and federal restrictions on how we can use our water to ensure the continued viability of the country's leading agriculture industry. The Wilson Administration will fight for each job needed to return our state to prosperity.

EPA's proposed test requires equipment costing at least $130,000, which is beyond the reach of an independent garage, per se. Yet, an effectively equal alternative, costing 440,000, would allow testing by local mechanics. We estimate that at least 3,000 automotive technicians would lose their jobs, and up to 1,300 businesses close their doors, under the EPA plan. In any case, emission reductions achieved from a new program should be used to mitigate some of the more onerous affects of current air quality programs, and we must mitigate the impact on owners and employees in the current Smog Check program.

Therefore, we shall support an enhanced Smog Check program only if it recognizes the economic climate of our state, protects the legitimate retailers who participate in our market-oriented inspection and repair programs, and ensures a high level of consumer protection. Achieving our mutual goals of protecting public health and promoting economic growth depends on the implementation of a flexible and results-oriented plan that embraces innovation and entrepreneurial activity.

It is clear the EPA's interpretation of the Clean Air Act does not meet these standards. As you know, governors are asking that the federal government allow states to adopt new and innovative programs whose success will be judged by performance-based standards, not by how close a state comes to a prescriptive and inflexible program such as the one promoted by the EPA. In fact, the EPA is rejecting alternative program designs out-of-hand.

This posture unnecessarily provokes the type of confrontation demonstrated by the EPA staff letter of March 19, 1993, and the one the Governor received last week. We urge you to reject this approach, and allow California the flexibility to develop an enhanced program which best suits our unique circumstances. Sanctions would punish Californians without balancing environmental, economic, and consumer interests. EPA should leave room for variations in program design that will enable us to continue to lead the nation in air pollution prevention programs.

We look forward to hearing from you in the very near future.

JAMES M. STROCK, *Secretary for Environmental Protection.*

SANDRA R. SMOLEY, *Secretary, State and Consumer Services Agency.*

Mr. BARTON. Thank you, and thank you for coming from Pittsburgh on such short notice. The gentleman from the Automotive Parts and Accessories Association, Mr. Lowe.

TESTIMONY OF AARON M. LOWE

Mr. LOWE. Mr. Chairman and members of the subcommittee, my name is Aaron Lowe and I am Director of Legislative and Regulatory Affairs for the Automotive Parts and Accessories Association. APAA is a trade association representing over 1,600 manufacturers, manufacturers' representatives, distributors and retailers of automotive parts and services.

APAA strongly supports emissions inspection as the most cost-effective method for reducing in-use vehicle emissions. However, since most of our members do not perform emissions testing, where permitted by the State, APAA does not have a preference for either the centralized or decentralized methods of testing. Instead, we contend that so long as the programs are effective in reducing in-use vehicle emissions, States should have the freedom to choose the testing network that best meets their emissions reductions and citizens' needs.

Mr. Chairman, if the Clean Air Act has been implemented as Congress had planned, we believe that this Nation would now have in place a viable, publicly-supported emissions inspection program. Unfortunately, such a program does not exist in most States. Instead, we find the inspection program under siege by Governors, legislators, industry and the public due to the inconvenience and high costs imposed by EPA's mandated centralized IM240 program. What is worse is that the Agency appears, at least for the moment, to be unwilling to make the regulatory changes to its I/M program necessary to address growing public opposition.

Due in large part to the Agency's intransigents, I/M is now threatened with either elimination or delay through actions being undertaken in the States and here in Congress. It was these dire circumstances that compelled APAA, along with 11 other automotive related organizations, to send a letter or, as I like to call it, a wakeup call to EPA that changes are necessary to put the I/M program back on track.

The letter, dated March 3, which I have attached to my written testimony, reiterates strong industry support for emissions inspections maintenance programs, but calls for changes to the current regulations which will result in programs that are both effective and acceptable to the public.

The letter made four basic recommendations which we believe the Agency should adopt at a minimum to avoid lengthy legislative action. Before reviewing these recommendations, I must state that the comments expressed in this testimony only reflect APAA's views and are not those of every organization which signed the letter.

First and maybe most important, EPA must eliminate the controversial 50 percent credit penalty for decentralized I/M programs, such that non-attainment areas may adopt and receive credit for an effective test and repair program. While APAA agrees with the Agency that past decentralized emissions inspection programs have not been effectively administered by the States, improvements in test equipment, administration and enforcement could eliminate many of these past program deficiencies.

Yet nowhere in any of the EPA literature have we found any substantive discussion or proposals to improve decentralized programs. It appears that the Agency is so enamored with the centralized IM240 that they believe no other network could come close and, therefore, should be abandoned. We feel that this view is both unfair and unrealistic and should be reviewed by the Agency.

APAA urges EPA to expend the same energy it has invested in developing and defending centralized IM240 toward generating methods for improving the effectiveness of I/M test and repair programs. On the positive side, while EPA has relented on the 50 percent penalty for decentralized networks, we have seen promising signs that the Agency is willing to provide States with some desperately needed flexibility.

Specifically, we applaud the latest document, dated February 27, 1995, entitled "I/M Flexibility Options in Emissions Reduction Credits." A significant progress for giving the States more power to design programs which better suit their public and air quality needs. In particular, we support the inclusion of the low enhanced performance standard, which permits many areas with less serious pollution problems, to retain their decentralized programs, with some modifications.

Encouraged by this progress, APAA hopes that the Agency will take the next step and permit more credit for decentralized I/M. Second, EPA should provide sufficient additional time for the States to finalize and revise their I/M programs. Considering the uncertainties surrounding EPA's I/M policy, it is not surprising that States will be late implementing I/M programs. Therefore, it is critical that States have additional time to revise their programs, without facing the threat of sanctions.

We believe that penalizing States which are making a good faith effort to comply will achieve nothing, but alienate the various parties and cause further delays toward attainment while the factions battle the issue in court and Congress.

Clearly, EPA must require States who choose to retain centralized I/M programs to provide for pilot testing. Whenever a company rolls out a new program or product, it will be test marketed in order to eliminate any bugs before being exposed to the general public. Introducing a rigorous testing program, such as centralized IM240, should be handled the same way. While many States are under tight deadlines for implementing I/M, contractors should be required to test government fleets for a couple of months prior to public vehicle testing in order to eliminate any technical or logistical glitches.

Finally, EPA should speed the process for reclassification or redesignation of qualifying areas. And I will just summarize. In conclusion, the impatience is felt by many in Congress and in the States toward EPA's handling of the emissions inspection program. It is APAA's hope that we can avoid legislative action to reopen the Clean Air Act.

Legislative efforts likely would delay implementation of these critical emissions inspection program for years, with a far from certain outcome. APAA strongly contends that the Agency already has the statutory authority to make the necessary changes in order to ensure an effective and publicly-supported I/M program. Though EPA so far has failed to provide sufficient flexibility, recent actions indicate that the Agency is willing to listen and explore other possibilities.

Therefore, it is our hope that Congress will continue to pursue efforts to obtain changes to the regulatory process before opening the legislative flood gates.

Thank you.

[The prepared statement and attachment of Aaron M. Lowe follow:]

STATEMENT OF AARON M. LOWE, DIRECTOR, LEGISLATIVE AND REGULATORY AFFAIRS, AUTOMOTIVE PARTS & ACCESSORIES ASSOCIATION, INC.

The Automotive Parts and Accessories Association is a trade association representing over 1,600 manufacturers, manufacturers representatives, distributors and retailers of automotive parts and services. APAA strongly supports emissions inspection as the most cost effective method for reducing in-use vehicle emissions. However, since most of our members do not perform emissions testing where permitted by the state, APAA does not have a preference for either the centralized or decentralized methods of testing. Instead, we contend that so long as the program is effective in reducing in-use vehicle emissions, states should have the freedom to choose the testing network which best meets their emissions reductions and citizen's needs.

Mr. Chairman, if the Clean Air Act had been implemented as Congress had planned, we believe that this Nation would now have in place a viable, publicly supported emissions inspection program. Unfortunately, such a program does not currently exist in most states. Instead, we find the inspection program under siege by governors, legislators, industry and the public due to the inconvenience and high costs imposed by EPA's mandated centralized I/M 240 program. What is worse is that the Agency appears, at least for the moment, to be unwilling to make the regulatory changes to its I/M program necessary to address growing public opposition. Due in large part to the Agency's intransigence, I/M is now threatened with either elimination or delay through actions being undertaken in the states and here in Congress.

It was these dire circumstances that compelled APAA, along with 11 other automotive related organizations to send a letter, or as I like to call it, "a wake-up call" to EPA that changes are necessary to put the I/M program back on track. The letter dated March 3, which I have attached to my written testimony, reiterates strong industry support for the emissions inspection/maintenance program, but calls for

changes to current EPA regulations which will result in programs that are both effective and acceptable to the public, states and industry.

The letter made four basic recommendations which we believe the Agency should adopt at minimum to avoid likely legislative action. Before reviewing these recommendations, I must state that the comments expressed in this testimony only reflect APAA's views and are not those of every organization which signed the letter.

First and maybe most important, EPA must eliminate the controversial 50 percent credit penalty for decentralized I/M programs, such that nonattainment areas may adopt and receive credit for an effective test and repair program. While APAA agrees with the Agency that past decentralized emissions inspection programs have not been effectively administered by the states, improvements in test equipment, administration and enforcement could eliminate many of the past program deficiencies. Yet, nowhere in any of the EPA literature have we found any discussion or proposals to improve decentralized programs. It appears that the Agency has been so enamored with centralized I/M 240, that they believe no other network could come close and therefore should be abandoned. We feel that this view is both unfair and unrealistic, and should be reviewed by the Agency. APAA urges EPA to expend the same energy it has invested in developing and defending centralized I/M 240 toward generating methods for improving the effectiveness of test and repair programs.

On the positive side, while EPA has not relented on the 50 percent penalty for decentralized networks, we have seen promising signs that the Agency is willing to provide states with some desperately needed flexibility. Specifically, we applaud the latest guidance document dated February 27, 1995 entitled "I/M Flexibility Options and Emission Reduction Credits" as significant progress toward giving the states more power to design programs which better suit their public and air quality needs. In particular, we support the inclusion of the "Low Enhanced Performance Standard" which permits many areas, with less serious pollution problems, to retain their decentralized programs with some modifications. In addition, agreements in New Jersey to permit hybrid programs utilizing the Acceleration Simulation Mode also should be recognized as progress toward a more workable I/M program. Encouraged by this progress, APAA hopes that the Agency will take the next step and permit more credit for decentralized I/M.

Secondly, EPA should provide sufficient additional time for states to finalize or revise their I/M programs. Considering the current uncertainty surrounding EPA's I/M policy, it is not surprising that states will be late in implementing I/M programs. Therefore, it is critical that states have additional time to revise their programs without facing the threat of sanctions. We believe that penalizing states which are making a good faith effort to comply will achieve nothing, but alienate the various parties and cause further delays toward attainment while the factions battle the issue in court and in Congress.

Thirdly, EPA must require states which choose to retain centralized I/M programs, to provide for pilot testing. Whenever a company rolls out a new program or product, it will be test marketed in order to eliminate any bugs before being exposed to the general public. Introducing a rigorous testing program such as the centralized I/M 240 should be handled the same way. While many states are under tight deadlines for implementing I/M, contractors should be required to test government fleets for a couple of months prior to public vehicle testing in order to eliminate any technical or logistical glitches. Such an extensive pretesting mandate is critical to ensuring that the programs get off on the right foot and do not receive bad publicity simply because the contractor wasn't ready on opening day.

Finally, EPA should speed the process for reclassification or redesignation of qualifying areas. Areas considering which I/M program to implement need to know their status as soon as possible so that they can make informed decisions. It makes little sense for an area which might qualify for a basic program to go through the motions of implementing an expensive enhanced I/M program simply because the redesignation process had not moved expeditiously through all the bureaucratic hoops.

In conclusion, while we understand the impatience felt by many in Congress and in the states toward EPA's handling of the emissions inspection program, it is APAA's hope that we can avoid legislative action to reopen the Clean Air Act. Legislative efforts likely will delay implementation of these critical emissions inspection programs for years, with a far from certain outcome.

APAA strongly contends that the Agency already has the statutory authority to make the necessary changes in order to ensure effective and publicly supported I/M programs. Although EPA so far has failed to provide sufficient flexibility to states, recent actions indicate that the Agency is willing to listen and explore other possibilities. Therefore, it is our hope that Congress will continue to pursue efforts to obtain changes through the regulatory process before opening the legislative floodgates.

That concludes my testimony and I would be more than willing to answer any questions from the Subcommittee regarding this issue.

March 3, 1995.

Ms. Carol Browner,
Administrator,
U.S. Environmental Protection Agency,
401 M Street, S.W.,
Washington, D.C. 20460

DEAR MS. BROWNER: We are writing to reiterate our strong support for emissions inspection/maintenance (I/M) programs as a cost effective method for reducing in-use vehicle emissions. Implemented conveniently and effectively, well designed I/M programs can significantly reduce emissions and be accepted by the motoring public.

As you are aware, many states are considering or have already passed legislation to delay implementation of their I/M programs, in large part due to growing public and service industry opposition to EPA's mandated test-only performance standard. In addition, several bills have been introduced in the U.S. Congress addressing I/M. For example, Congressman Gekas has introduced legislation that would mandate an equivalent decentralized enhanced performance standard, delay program implementation, and provide relief to areas in the Ozone Transport Region. Senator Gregg also offered legislation which could delay implementation of I/M programs while rules are promulgated permitting decentralized testing. Congressman DeLay's bill would repeal the mandatory requirement for I/M programs.

While legislation may in the end be necessary, we believe that the Agency already possesses sufficient authority to make changes that result in I/M programs that are more acceptable to the public, states and industry. Regulatory action by EPA is preferred over reopening the Clean Air Act, especially given the unavoidable delay and unpredictability associated with potential legislation.

We therefore urge the Agency to work with the states and industry to issue revised I/M regulations/guidance as soon as possible. This action should occur no later than August, 1995, with full state implementation by August, 1996. At minimum, we believe these revisions must include the following elements to ensure political and public acceptance.

Elimination of the controversial 50 percent credit penalty for decentralized I/M programs to permit any nonattainment area to adopt and receive credit for effective test and repair programs

Sufficient additional time for states to finalize or revise their I/M programs.

A requirement that states retaining centralized (test-only) I/M programs provide for pilot testing. Limited "trial runs" of public vehicle fleets are necessary to ensure that programs operate at peak performance before they open to the public.

An efficient and timely redesignation/reclassification process for eligible areas.

In addition, we urge you to strongly promote to the states the development of waiver assistance programs funded with testing fees as an effective means of reducing the potential impact of costly emission system repairs.

In closing, including the above elements in the rulemaking could eliminate the perceived need for significant legislative action. We look forward to working with the Agency to develop regulations that provide for acceptable, effective, and timely I/M programs.

We thank you for your immediate attention.
Sincerely,

Automotive Engine Rebuilders Assoc.
330 Lexington Drive
Buffalo Grove, IL 60089-6998
Contact: Barry Soltz

Auto International Assoc.
1317 F Street, NW, Suite 550
Washington, DC 20004
Contact: Chris Kersting

Automotive Parts and Accessories Assoc.
4600 East-West Highway
Bethesda, MD 20814
Contact: Aaron Lowe

Automotive Parts Rebuilders Assoc.
4401 Fair Lanes Court, Suite 210
Fairfax, VA 22033
Contact: William Gager

Automotive Service Industry Assoc.
1555 Wilson Boulevard, Suite 300
Arlington, VA 22209
Contact: Tyler J. Wilson

Automotive Warehouse Distributors Assoc.
1100 Connecticut Avenue, Suite 1100
Washington, DC 20036
Contact: George Tobin

Coalition for Auto Repair Equality
119 Oronoco Street
Alexandria, VA 22314
Contact: David Parde

Motor & Equipment Manufacturers Assoc.
1325 Pennsylvania Avenue, Suite 600
Washington, DC 20004
Contact: Paul Haluza

National Automobile Dealers Assoc.
8400 Westpark Drive
McLean, Virginia 22102
Contact: Douglas Greenhaus

Petroleum Marketers Assoc. of America
1901 N. Fort Myer Drive, Suite 1200
Arlington, VA 22209-1604
Contact: John Huber

Service Station Dealers of America
9420 Annapolis Road, Suite 307
Lanham, MD 20706
Contact: Jim Daskal

Specialty Equipment Market Assoc.
1317 F Street, NW, Suite 550
Washington, DC 20004
Contact: Chris Kersting

Mr. BARTON. Thank you, Mr. Lowe. We now recognize Mr. Leonard for a 5-minute statement.

TESTIMONY OF TED LEONARD

Mr. LEONARD. Mr. Bliley, Mr. Chairman and members of the committee, good afternoon. My name is Ted Leonard. I am the General Manager of the Pennsylvania AAA Federation, which is an organization of all American Automobile Association clubs in Pennsylvania, representing a membership of over 2.5 million motorists.

I am grateful for the opportunity to appear before you today to talk about the Pennsylvania experience with auto emissions testing. On December 16, 1992, the General Assembly of Pennsylvania passed legislation that became Act 166 of 1992. This legislation provided for the implementation of an enhanced auto emissions testing program in 33 of Pennsylvania's 67 counties.

The program, which was scheduled to begin in January 1995, would have affected 6 million motorists, widely distributed throughout the State. Act 166 also created a Vehicle Inspection Program Advisory Committee, of which the Pennsylvania AAA Federation is a member. At an early meeting of the Program Advisory Committee, a State official pronounced "Virginia submitted a request to the EPA for a combined test and repair program. EPA refused this option and will not entertain a similar request from Pennsylvania."

The stage was, therefore, set for Pennsylvania to adopt a centralized emissions testing program, consisting of 86 contractor-run testing sites throughout the State. The Pennsylvania AAA Federation raised objections to the centralized program as costly and inconvenient to our motorists, but we were told the State had no choice. If Pennsylvania did not adopt the EPA mandated central-

ized emissions testing program, the State would be punished through loss of highway funds, some said as high as $1 billion.

In late 1993 and early 1994, we became aware of information and activities in other States and, indeed, in other countries that suggested a centralized emissions testing program in Pennsylvania would lead to massive problems for our motorists. We also became aware of the growing body of evidence and scientific study that showed emissions testing contributed very little benefit to the improvement of air quality.

Through AAA periodicals and other media, we apprised the motoring public in Pennsylvania about the nature of the intended emissions testing program. Public reaction was swift and overwhelmingly opposed to the centralized program. One of our clubs, in a 3-week period, gathered over 40,000 signatures on a petition opposing the centralized emissions testing program.

Another organization in southwestern Pennsylvania gathered over 100,000 signatures on a comparable petition, and AAA clubs throughout the State experienced a similar reaction. A gallup poll of AAA members in Pennsylvania taken in October 1994 indicated that 90 percent of the respondents preferred a program other than centralized testing. Seventy-seven percent of the respondents expressed outright opposition to the centralized program.

We obtained very positive bipartisan backing of our State legislators, who, by the end of 1994, voted to suspend the centralized program in Pennsylvania. Throughout the debate over centralized emissions testing, the Pennsylvania AAA Federation has maintained the position that we wholeheartedly favored any program that would lead to cleaner air, as long as it was effective, cost-efficient and convenient to our motorists.

This position, unfortunately, led to unwarranted and uneducated attacks by environmental groups and other special interest groups, some backed financially by the centralized contractor. We shared the goal of cleaner air for Pennsylvania, but we could not understand the position of some of these groups on the method of cleaning the air. The insistence upon separation of test and repair seemed to overshadow the primary concern of creating an effective program for clean air.

Some areas in Pennsylvania were placed on the air quality nonattainment list as a result of the abnormally high temperatures experienced in the summer of 1988. The air quality in Pennsylvania was much better than the 1988 survey would suggest. For example, in 1988, Pennsylvania experienced 221 exceedances of the ozone air quality standard. In 1994, the entire State experienced only nine exceedances of the ozone standard.

Carbon monoxide levels in Pennsylvania have decreased 52 percent over the last 10 years, despite an increase in the number of cars and highway travel. Nowhere in the State in recent years have we experienced an exceedance of the carbon monoxide air quality standard. Because Pennsylvania is a member of the Northeast Ozone Transport Commission, it was required to implement an enhanced emissions testing program in 33 counties, regardless of the quality of the air in those counties. Participation in the centralized emissions testing program was mandated solely upon the popu-
ion of those counties, not upon the air quality of the region.

The only area in Pennsylvania classified under the 1990 Clean Air Act Amendments as having a severe ozone problem is the five-county Philadelphia area. And if that region were surveyed today, it would rate a less serious classification.

Recently, our newly-elected Governor, Tom Ridge, extended the suspension on the implementation of the centralized emissions testing program. We are pleased the Governor has taken this action and that he has directed our Department of Transportation and Department of Environmental Resources to research alternative strategies. We are concerned, however, that many unanswered questions remain. For example, how accurate is the presumption that enhanced emissions testing will produce emissions reductions? When I have asked that question, I have been told, "intuitively it should". There are no studies other than theoretical computer models which would show that emissions testing equals emissions reductions.

On the contrary, studies, some of which were authored by the experts appearing here today, have demonstrated that emissions testing has made little impact on improving air quality. We are also concerned that emissions testing strategies may be driven by EPA's policy of discounting emissions credits for programs other than centralized testing.

The available literature suggests that there is little or no scientific or technical basis for a 50 percent emissions credit discount.

Mr. BARTON. Could you summarize in the next minute or so, please?

Mr. LEONARD. Yes, sir. To those who would trivialize the cost of a centralized program as a small price to pay for cleaner air, I would say that the $250 million for one test cycle of Pennsylvania's motorists is not a small price to pay for a program of unproven or dubious benefit. That $250 million price tag does not include the motorists' inconvenience, frustration and wasted effort.

In summary, there is growing evidence that the current emissions programs have failed to live up to expectations. They have served the purpose of rallying public dissent toward any type of environmental initiative. Many States, including Pennsylvania, are seeking flexibility to design programs that meet their unique requirements and still prove efficient, cost-effective and user-friendly.

To that end, we believe that Representative Gekas' bill, H.R. 46, would provide a common sense approach to correcting many of the problems associated with auto emissions testing. Thank you for this opportunity to present our concerns.

[The prepared statement of Ted Leonard follows:]

STATEMENT OF TED LEONARD, GENERAL MANAGER, PENNSYLVANIA AAA FEDERATION

Good afternoon. My name is Ted Leonard. I am the General Manager of the Pennsylvania AAA Federation, which is an organization of all American Automobile Association clubs in Pennsylvania, representing a membership of over 2.5 million motorists. I am grateful for the opportunity to appear before you today to talk about the Pennsylvania experience with auto emissions testing.

On December 16, 1992, the General Assembly of Pennsylvania passed legislation that became Act 166 of 1992. This legislation provided for the implementation of an enhanced auto emissions testing program in 33 of Pennsylvania's 67 counties. The program, which was scheduled to begin in January 1995, would have affected six million motorists, widely distributed throughout the state. Act 166 also created a vehicle inspection program advisory committee of which the Pennsylvania AAA Fed-

eration was a member. At an early meeting of the program advisory committee a state official pronounced, "Virginia submitted a request to EPA for a combined test and repair program. EPA refused this option and will not entertain a similar request from PA." The stage was therefore set for Pennsylvania to adopt a centralized emissions testing program, consisting of 86 contractor-run testing sites throughout the state. The Pennsylvania AAA Federation raised objections to the centralized program as costly and inconvenient to our motorists, but we were told the state had no choice. If Pennsylvania did not adopt the EPA-mandated centralized emissions testing program, the state would be punished through loss of highway funds—some said as high as $1 billion.

In late 1993 and early 1994 we (AAA in PA.) became aware of information and activities in other states, and indeed in other countries, that suggested a centralized emissions testing program in Pennsylvania would lead to massive problems for our motorists. We also became aware of the growing body of evidence and scientific study that showed emissions testing contributed very little benefit to the improvement of air quality in PA. Through AAA periodicals and other media, we apprised the motoring public in PA about the nature of the intended emissions testing program. Public reaction was swift and overwhelmingly opposed to the centralized program. One of our clubs, in a three-week period, gathered over forty thousand signatures on a petition opposing the centralized emissions testing program. Another organization in southwestern PA gathered over one hundred thousand signatures on a comparable petition, and AAA clubs throughout the state experienced a similar reaction. A gallup poll of AAA members in PA, indicated that ninety percent of the respondents preferred a program other than centralized testing; seventy-seven percent of the respondents expressed outright opposition to the centralized program. We obtained the very positive bipartisan backing of our state legislators who, by the end of 1994, voted to suspend the program in PA.

Throughout the debate over centralized emissions testing, the Pennsylvania AAA Federation has maintained the position that we wholeheartedly favored any program that would lead to cleaner air as long as it was effective, cost-efficient, and convenient to our motorists. This position, unfortunately, led to unwarranted and uneducated attacks by environmental groups and other special interest groups—some backed financially by the centralized contractor. We shared the goal of cleaner air for Pennsylvania, but we could not understand the position of some of these groups on the method of cleaning the air. The insistence upon separation of test and repair seemed to overshadow the primary concern of creating an effective program for clean air.

Some areas in PA were placed on the air quality non-attainment list as a result of the abnormally high temperatures experienced in the summer of 1988. The air quality in PA, today, is much better than the 1988 survey would suggest. For example, in 1988 PA experienced 221 exceedances of the ozone air quality standard. In 1994, the entire state experienced only 9 exceedances of the ozone standard. Carbon monoxide levels in PA have decreased 52 percent over the last ten years, despite an increase in the number of cars and in highway travel. Nowhere in the state, in recent years, have we experienced an exceedance of the carbon monoxide air quality standard. Because PA is a member of the Northeast Ozone Transport Commission, it was required to implement an enhanced emissions testing program in 33 counties, regardless of the quality of air in those counties. Participation in the centralized emissions testing program was mandated solely upon the population of those counties, not upon the air quality of the region. The only area in PA classified under the 1990 Clean Air Act Amendments as having a severe ozone problem is the five-county Philadelphia area—and if that region was surveyed today, it would rate a less serious classification.

Recently, our newly-elected Governor, Tom Ridge, extended the suspension on the implementation of the centralized emissions testing program. We are pleased the Governor has taken this action, and that he has directed our Department of Transportation and Department of Environmental Resources to research alternative strategies. We are concerned, however, that many unanswered questions remain. For example, how accurate is the presumption that enhanced emissions testing will produce emissions reductions? When I have asked that question, I have been told that "intuitively it should." There are no studies, other than theoretical compute models, which would show emissions testing equals emissions reductions. On the contrary, studies, some of which were authored by experts appearing here today, have demonstrated that emissions testing has little impact on improving air quality. We are also concerned that emissions testing strategies may be driven by EPA's policy of discounting emissions credits for programs other than centralized testing. The available literature suggests that there is little or no scientific or technical basis for a 50 percent emissions credit discount for de-centralized programs. In its preference

and bias for a centralized emissions testing program, the EPA computer model that has generated the emissions credit discount completely ignores the aspect of human behavior pertaining to driving habits and emissions testing. Surely a program that has gained public acceptance and support will be more successful in achieving its goal than one implemented under the threat of punishment and sanctions. To those who trivialize the cost of a centralized program as, "a small price to pay for clean air", I would say that the $250 million (6 million cars × $17 fee = $102 million plus 20 percent failure repair cost at $120 of $144 million) for one test cycle of Pennsylvania's motorists is not a small price to pay for a program of unproven or dubious benefit. That $250 million pricetag does not include the motorists' inconvenience, frustration, and wasted effort.

As I said earlier in my statement, the Pennsylvania AAA Federation strongly supports the goal of cleaner air and any reasonable efforts to achieve that goal. A program as rudimentary as augmenting the state's existing annual auto safety inspection with an emissions check would be transparent to the motorist, yet it could be as effective in reducing auto emissions. New technology such as remote sensing and on-board diagnostics also should be investigated for their potential in making an actual contribution to emissions reduction.

In summary, there is growing evidence that current emissions programs have failed to live up to expectations. They have served the purpose of rallying public dissent toward any type of environmental initiative. Many states, including Pennsylvania, are seeking the flexibility necessary to design programs that meet their unique requirements and still prove efficient, cost-effective, and consumer-friendly.

Thank you for this opportunity to present our viewpoint. I would be happy to answer any questions.

Mr. BARTON. Thank you, Mr. Leonard. The Chair would recognize the distinguished chairman of the full committee, Mr. Bliley, for questions.

Chairman BLILEY. Thank you, Mr. Chairman. Mr. Strauss, you illustrate how EPA puts the dealer in a most difficult position of doing a repair without the ability to know that the work done has actually repaired the problem. I think most people approach auto repairs the way I do, take the car in, expect the repair to be done right the first time. If the repair facility doesn't fix the problem, I generally don't go back. Am I outside the mainstream on this or do most people approach repair work that way?

Mr. STRAUSS. Mr. Bliley, I would say that you're pretty normal and most people do go into a shop and expect the work to be done right the first time and that the promise of an efficient and a cost-effective repair to whatever problem they might have will be addressed right then.

Chairman BLILEY. Well, how long have you been in the car business and was it easy building a successful and respected dealership?

Mr. STRAUSS. I've been in the business 41 years and, no, it was not easy. I consider myself to be a customer-driven dealership. I employ 150 people. We have a very large shop, with over 90 people working on cars and delivering parts in any given day, and we do a lot of emissions work, along with other kinds of repair work. So it's been fun, it's been rewarding, but it's been a challenge.

Chairman BLILEY. Could you give us an idea of what percentage of your sales and repair work is based on repeat business?

Mr. STRAUSS. Well, you're a good example. You're one of the best repeat customers I've got. I would say over 41 years, I've built my business expecting to attract at least 50 percent of the people who do business with us back again. And, today, with the advent of showroom leasing, where we're attracting people to lease cars on a 24-month cycle, we're recycling people back into the business at a

much more rapid rate than ever before, and I expect that figure to go up.

Chairman BLILEY. Well, unfortunately for you, but fortunately for your customers, most of them don't have to drive the streets of Washington, so they don't need the repairs as often perhaps as I do.

Mr. STRAUSS. Finding the car might be a problem.

Chairman BLILEY. I think I'd feel a little betrayed if the government forced me and my business into a situation where a good relationship built up over the years would likely be tarnished. How would you feel about it?

Mr. STRAUSS. I think you're right on point, Mr. Chairman. We work very hard to build a relationship with our customers and when we're put in a position of having to make a repair and then not know whether the repair has been effective or not and put the customer back at a point where we no longer have control over the repair that was made and then only to find out that perhaps we didn't address the problem or that the testing equipment that's being used to retest is different than anything I might have at the dealership, because I certainly can't afford $250,000 for an IM240 to make sure that the problem that was identified at the centralized testing station is one that I've addressed and repaired.

Somebody said something about ping-pong. That's what this appears to be, to me. It's going to be a ping-pong ball and the consumer is going to be the one that gets ping-ponged.

Chairman BLILEY. I thank you very much. Mr. Leonard, while the EPA repeatedly has stated it would be flexible in the implementation of inspection and maintenance programs, you have written the Pennsylvania AAA was told the State had no choice but to institute a centralized program. Can you tell us who told you the State had no choice and on what authority they did so?

Mr. LEONARD. This was in 1992, sir, that the State was told they had no choice. This came out at an Inspection Advisory Group meeting and this was relayed to us by a member of the Pennsylvania Department of Environmental Resources and backed up by the Pennsylvania Department of Transportation.

Chairman BLILEY. Do you consider this flexibility?

Mr. LEONARD. I don't believe flexibility was in the EPA's vocabulary back then.

Chairman BLILEY. I see. You mention in your written testimony that AAA was subjected to unwarranted and uneducated attacks by environmental groups and other special interests, some backed financially by the centralized contractor. Can you elaborate, Mr. Leonard, on the financial support and your opposition by that centralized contractor?

Mr. LEONARD. The Pennsylvania Legislative Budget and Finance Committee performed an investigation into the inspection and maintenance program in Pennsylvania and it was determined that the centralized contractor, in this case, Envirotest, had contributed some money to one of the environmental groups, the American Lung Association, and the American Lung Association and several other environmental groups came out with ad campaigns in the newspaper. They embarked on a letter-writing campaign. They also had hired a consultant who had generated a further letter-writing

campaign not only to AAA members, but to the AAA Board of Directors in Pennsylvania.

Chairman BLILEY. Thank you, Mr. Leonard. Thank you, Mr. Chairman.

Mr. BARTON. Thank you. The gentleman's time has expired. The Chair has a series of questions. I would like to ask the gentleman with the Service Station Dealers Association a question about this 50 percent discount on decentralized testing because of the possibility of fraud.

What the EPA is basically saying is that the members of your association that conduct such tests, half of them are crooks. How do you respond to that?

Mr. HADDAD. At a hearing, the State Senate hearing, in 1992, when they talked about going into the centralized I/M—and by Mr. Bliley's question—the Administrator from the EPA testified that if Pennsylvania didn't go to IM240, we would be sanctioned. There would be no highway funds. And, consequently, the majority of the Senators who were voting on that committee voted to go into this program. But now you've got to ask me that question again. I forgot it.

Mr. BARTON. My question is that under current regulations at the EPA, States that wish to use a decentralized test, which would be conducted either in an auto dealer or, in many cases, service station, you only get 50 percent credit and when you ask them why only 50 percent, there is no empirical data to justify it, so they say because we think there's going to be fraud.

The car owner will say give me a passing grade and I'll pay you some extra dollars. I don't know what would happen. But basically they discount it by 50 percent because of the fact that the person conducting the test is also the person doing the repairs, which means if you want to be crude about it——

Mr. HADDAD. That we were crooks.

Mr. BARTON. That you at least could be crooks. So how do you personally and your association respond to this fraud allegation?

Mr. HADDAD. I appreciate this opportunity, Mr. Chairman. At that same committee hearing, the Administrator of the EPA just generally said that, but when the Pennsylvania Department of Transportation Safety Director testified, a gentleman by the name of John Pachuda, testified that we had to go into this type of program or else we would lose all these highway funds. He testified that his department conducted a covert investigation of the emission testing stations in Pennsylvania and they found that 33 percent of the stations were conducting fraudulent tests; 33 percent were honest errors; and, 33 percent were good legitimate tests.

Mr. BARTON. And these were the centralized tests or decentralized.

Mr. HADDAD. No. We didn't have centralized at the time.

Mr. BARTON. Decentralized.

Mr. HADDAD. It was decentralized. What I'm saying is he said that 66 percent of us were doing improper tests. Therefore, we had to go to the centralized only. What the Senate Investigating Committee found out a year later, the Senate passed a resolution and investigated the whole program, they found out that John Pachuda and his people only checked 14 stations out of 3,524.

Mr. BARTON. Who is John Pachuda?

Mr. HADDAD. John Pachuda was the Safety Director of Pennsylvania Department of Transportation and according to the newspaper articles in the Pittsburgh Tribune Review, he is now a Vice President for Envirotest.

Mr. DASKAL. Mr. Chairman, if I could just very briefly. This whole issue of the conflict of interest, first of all, EPA talks out of both sides of their mouth. First, they say you pass cars that you'd fail because you want to please your customers, but then they say you fail cars that should pass because you want to generate repair business. Now, which is it? The only data they cited in favor of this was a phone survey by some company called Rider Research, which is in my hometown of Annapolis, which I can't find. When we got the survey, it turned out that it was paid for by the association representing the centralized contractors.

And it asked the people in this phone survey a number of these have you stopped beating your wife questions, like what did the dealer try to sell you before he did the emissions test. And this Rider Research survey is what they keep citing in favor of this. I think it's time to realize that separating test and repair is not the magic bullet that's going to cause I/M programs to work, because we've heard today none of them, centralized or decentralized, have done what EPA predicted they would do.

Mr. BARTON. Of course, if there is a probability or a possibility of fraud in a decentralized test, there is arguably the same possibility of fraud in the centralized test. There is nothing that I know of that guarantees the personnel at a centralized test station are going to be more honest.

Mr. DASKAL. Could I give you a real world example of that that we talked about briefly in our testimony? Because New York City decided they were going to centralize the taxicab inspections because they heard the same nonsense that you can't trust business people like Mr. Haddad here to do the testing.

So they did this Star Wars centralized taxicab testing and it turned out that they had to shut it down because the taxicab operators were paying off the centralized test-only inspectors in New York City to do the test. So you're exactly right.

Mr. BARTON. Well, my time has expired. There are no minority members wishing to ask questions. We have a member of the full committee, Mr. Bilbray, and we'll recognize him for 5 minutes.

Mr. BILBRAY. Thank you, Mr. Chairman. I'd just like to sort of throw it open. I've got a question for those of you that are experts in the inspection process. Between the decentralized and centralized programs, how do we make sure that the people who don't register their car within that jurisdiction get their car smogged?

Mr. HADDAD. To get their cars what?

Mr. BILBRAY. Smogged, to get them inspected at all.

Mr. HADDAD. To get them tested?

Mr. BILBRAY. If you don't register in the non-attainment area, if you don't register in that State.

Mr. HADDAD. The way the program was to have taken place in Pennsylvania, when they got their license plate renewal, the registration renewal, they also got a letter to go get their car emissions tested and if they didn't have that form in with them when

they went to get their car tested, their license plate wasn't renewed.

Mr. DASKAL. I think the short answer is we don't have an answer. Hopefully, if we did a remote sensing network, then we could track down some of these people without having to rely on necessarily the vehicle registration. But the short answer is we don't have a way. I know the problem you have in the San Diego area.

Mr. BILBRAY. You do. I'm impressed.

Mr. DASKAL. I have an office there.

Mr. BILBRAY. Thirteen percent of our pollution comes from Mexico and cars that commute every day that aren't registered, and they're 1 percent of the vehicles. Also, if I'm an employee of the Federal Government, under the Soldiers and Sailors Act, the Federal Government tells the State and the local agencies that we can't require a Federal employee to have their cars registered in that State and, de facto, the Federal employee is exempt from the vehicle inspection.

The same Federal Government that is bringing sanctions down on the local community because of air pollution, are exempting their employees from having to fulfill this requirement. I just was wondering because we talk about fraud. The greatest fraud out there from the environmental point of view are those who are totally avoiding the situation, and the command and control mentality here is that we are going to enhance and increase the accountability of people to have their cars inspected.

But what we're doing is we're enhancing the requirement for those who are now law abiding citizens, who are fulfilling the existing environmental law, and we're ignoring that segment of the population which is not fulfilling the existing law, and it's a typical government strategy. We do it all the time in our society. We punish those who are playing by the rules and we actually reward those who are not playing by the rules at the same time, Mr. Chairman, that our own Federal employees get to take a walk, by Federal law, but we say we care about the environment.

What my point is, is that this issue needs to get back to the fact that before we start talking about asking those who are already having their cars smogged, which I strongly—you know, let's face it, guys. The enhanced inspection and maintenance numbers look darn good compared to what we're doing with stationary sources. We've got to talk about the impact of mobil sources. Evaporative emissions is a major issue that neither one of these programs have talked about, and we've got to look at that you know, we've underestimated evaporative emissions by almost 85 percent.

What I want to raise again, and will continue to raise, is the fact that before we ask the existing law abiding citizen to do more, to pay more, to go through more, we darn well ought to be filling this gap, which is a credibility gap with those of us in the environmental community, and make sure that those who are not even getting their cars inspected now, be they foreign nationals, be they out-of-State registration or be they Federal employees, that we nail those people first and make them do what everybody else is doing first before we ask those who are already toeing the line to carry more weight.

Mr. STRAUSS. Mr. Bilbray, I'd just like to hitchhike on what Mr. Haddad said, and that is with regard to the fraud issue. In Virginia, all of the automobile dealers and independent garage owners and service station owners are charged with the responsibility for State inspection. We have one of the best State inspection laws in the United States. We're charged with the safety of people's cars on the road. There is very little evidence to suggest that any dealer, new car dealer, used car dealer, or independent service station operator is engaged in any widespread fraud in the issue of State inspection stickers.

I can't, for the life of me, understand why you would allow us to have the lives of our citizens in our hands when we State inspect their cars and, yet, when it comes to testing for emissions and repairing an emission problem, you think that there would be some widespread fraud. That is absolutely unrealistic.

Mr. BILBRAY. My point was the greatest fraud is those who never bring their car in to be inspected to start with.

Mr. STRAUSS. Exactly. And, incidentally, if I could just say one more thing, one of the reasons in Virginia that we're so opposed to this program is there's nothing to keep somebody in the northern part of Virginia, who is subject to the centralized system, from driving the car over the line and going to an area to get his car inspected where he's not.

Mr. BARTON. The gentleman's time has expired.

Mr. BILBRAY. I appreciate it, Mr. Chairman, and I appreciate the chance to be able to converse with you, because it is an item that needs to be addressed quite comprehensively. Thank you very much, Mr. Chairman.

Mr. BARTON. Would the gentleman from Maine like to ask some questions? Recognized for 5 minutes.

Mr. LONGLEY. Thank you, Mr. Chairman. I want to pick up on the threat of sanctions, because as I speak, the folks in my State are facing a lawsuit for $40 million pursuant to a contract that was executed with Cartest to execute this flawed program and, furthermore, we're facing sanctions under loss of highway funds that could exceed $80 or $100 million. So it's a very serious issue in my area.

But having said that, I'm curious. Is it your testimony, sir, that Virginia has been testing cars for several years before this began, before the recent problem?

Mr. STRAUSS. Yes, sir.

Mr. LONGLEY. What year did you start testing?

Mr. STRAUSS. I can't tell you. It's been in place for, I would say, at least 7 or 8 years.

Mr. DASKAL. Probably since the Clean Air Act Amendments of 1977 kicked in.

Mr. LONGLEY. I guess the point that I want to make is that it appears that the State of Virginia has had a considerable amount of experience with testing programs and I'm curious as to what was the nature of the relationship between those of you in the State who were already engaged in these programs and those at the EPA who were apparently trying to bring in a different type of program. Was there any form of dialogue at all or was there any consider-
whatsoever extended to obtain the benefit of your experience?

If you will, I want to posit the scenario which is, on the one hand, you have a State which would appear to have had a significant amount of experience, hard, practical experience with real live air emissions testing programs, on the one hand, and a Federal bureaucracy with little or no experience at all, on the other hand.

Was there any attempt to seek the benefit of your experience?

Mr. STRAUSS. There was. Approximately 3 years ago, I was asked to come to Washington and testify before the EPA on this very issue. When it became my time to come up and sit at a table and testify, about half of the panel had gotten up and left the room. Two of them were sitting up there reading the newspaper and about 2 out of a dozen people were actually paying any attention to anything I had to say. It was the most disheartening testimony that I've ever given, and I've given a lot of testimony on the Hill.

Mr. DASKAL. Congressman——

Mr. BARTON. Let the record show no one is reading the newspaper right now.

Mr. LONGLEY. Let the record show that, also, that the majority party is fully represented at this hearing.

Mr. DASKAL. Congressman, let me just add, because I was very much involved in the 1990 Clean Air Act Amendments and on this specific issue. This has always been something of a stepshout. If you had gone to EPA, because I did, because I was looking, frankly, for a way to get my guys out of widespread use of stage two vapor recovery and I met with Dick Wilson, who was the EPA official who said he told the State of Virginia, I will personally see to it, I will pull your step out of the pile and impose sanctions if you don't do IM240.

And EPA consistently said that enhanced I/M will only get you 2 percent VOC reductions, which looked good to us because we were trying to get stage two out of the Northeast Ozone transport Commission provisions of the Clean Air Act, and it was a four-step challenge. And as Mr. Bilbray pointed out, all of a sudden we discovered evaporative emissions are a big source and maybe we can test them and maybe we can test for them in enhanced I/M.

The bill that passed here, the provisions that are in the statute basically track what was the state-of-the-art in I/M in 1990, which was basically the California Bar 90 system. Now, it turns around in January 1991, EPA comes out with this technical paper on IM240, which is the first time that most of us in the public had ever seen or heard of IM240. I've talked to a number of State legislators on this, who say, you know, who on God's green earth ever voted for this thing and you all turned around and said, well, Congress voted on it.

And Congress didn't vote on because nobody in this committee had ever even heard of IM240 because if you look at EPA's testimony back then, when they do the pie chart saying this program gets you this much emissions reductions, you won't even see enhanced I/M on the chart or it might be just a little bit of a sliver. I haven't gone back. I mean, I've got the old bills, but I don't have all the old testimony.

But the bottom line is that this was an ignored stepchild that until the role of evaporative emissions suddenly became the key issue, then all of a sudden we had the big push to go to IM240.

And because the costs of IM240 are so high, you can only do it in a centralized setting. That was one of the reasons why the EPA staff has just been so adamant that separation of test and repair is going to be the magic bullet that makes these programs work.

I hope that kind of answered your question. The bottom line is that this is not an issue that has been the subject of extensive Congressional hearings, because everybody thought it was not going to be a big piece of solving the non-attainment puzzle.

Mr. LONGLEY. Thank you.

Mr. BARTON. The gentleman's time has expired. I just have a few summary statements to make and then we'll adjourn the hearing for the day. First, let me say that it's understandable that when people come to testify, you expect a full panel to hear your testimony. It's disheartening to me to come and see how few members sometimes sit through the entire hearing.

And, of course, as is always the case, you're going to have more attendance at the beginning of the hearing than you are at the end. That does not mean that the testimony that's given later in the day with fewer people is less relevant or less important or has less of an impact. And I can assure each of you that there are going to be summaries made of your oral testimony and the answers to questions that are going to be distributed in both the minority and the majority.

The fact that you represent collectively millions of Americans, your testimony is going to really be listened to. So don't be too disheartened that there are not as many of us up here as you had hoped that there would be.

My summary question to the panel would be, and especially the Automotive Parts and Accessories gentleman and the American Automobile Association representative, do either of you believe that your associations would support only the centralized test, IM240? I am assuming that you all would agree with these gentlemen that the centralized test should be a part of I/M and the decentralized test should be given more than 50 percent credit.

Mr. LOWE. Well, we would certainly support if a State would like to use centralized I/M and we think they should get extra credit for that, because we do think the IM240 is probably one of the most accurate ways of checking emissions. But we don't know if it's really worth the extensive costs that go along with it or the long waits that go along with it.

But if it's workable for the State and can be put into place, I think the State should get credit for that, for the centralized IM240 program.

Mr. BARTON. I don't think there's anyone that's going to object to that.

Mr. LOWE. We just don't think that the 50 percent penalty for a State that wants to do an effective test and repair program, and I don't think the effectiveness has really been explored by EPA, it shouldn't be 50 percent. It should be something much more than 50 percent. What that number is, I'm not really certain. We have not been able to figure out where the 50 percent number really came from. It's hard when you read the data.

Mr. BARTON. Well, we're going to ask the EPA officials that question tomorrow.

Mr. LOWE. Well, we've asked and we still don't quite understand.

Mr. BARTON. We're going to ask it to them on the record under oath. Mr. Leonard.

Mr. LEONARD. The AAA in Pennsylvania has steadfastly opposed the centralized IM240 type of program. We are also pleased to see that our new Governor, Tom Ridge, a former member of the House of Representatives here, has also stated his opposition to that.

Mr. BARTON. So that means, by subtraction, if you oppose IM240 centralized testing, you support the decentralized testing or do you even go that——

Mr. LEONARD. We believe that some form of emissions testing is necessary, certainly, and that would either be a decentralized or perhaps even some form of hybrid. I think we'd have to look at it.

Mr. DASKAL. Mr. Chairman, may I briefly raise I think a very important point that you all should raise with EPA tomorrow? We, throughout this hearing, have done what Congress did in 1990 in that we have used the terms centralized and decentralized in their common sense usage; that is, a decentralized being a test and repair system like you have in Virginia, like you've had in Pennsylvania, where you have test and repair under the same roof. EPA came up with a different definition in their rule and our testimony addresses it.

They have redefined terms that you used in this statute by regulation in order to defeat any possibility that a State could adopt a decentralized system. What we've cited specifically to the Federal Register, EPA has derived a concept that they call decentralized test-only, which, in their words, quotes, would look very much like the centralized systems that existed in 1990.

So by redefining what you call a centralized system as a decentralized system, they've tried to get around the requirement in the act that they have to provide equivalency criteria. In other words, tell the States how they can design a decentralized program that is the same. They've done the same thing with on-road testing. When the on-road testing provision was added, everybody understood what it meant. It meant remote sensing.

Mr. BARTON. We thought we understood what it meant.

Mr. DASKAL. We thought we did, yes, exactly. We thought we understood what it meant. But when the regulations came out, EPA redefined the term. I think that one of your questions tomorrow should be, and I will be glad to provide counsel with a cite, where did EPA get the authority to derive the concept of decentralized test-only I/M, when this committee, when it passed this bill in 1990, never even heard of such a program because nothing like it existed.

Mr. BARTON. I think that's a very valid point. I guess one last question and then Mr. Bliley wants a question. You're here mainly to make sure that decentralized testing is given a fair shake as opposed to the IM240 centralized test. Are there any of your associations that feel that remote sensing should not be a part of some comprehensive I/M plan?

Mr. LOWE. I'd like to just make one comment about remote sensing. We would definitely support remote sensing being part of the I/M program. We think that, as you mentioned, the speed gun, or

was mentioned at the hearing, it definitely gives an incentive whether they're caught or not to keep their car in compliance.

Our biggest fear is that if the program is not accurate, if it's not considered accurate, we're going to have people come in our shop saying they failed and they need to get repaired and there may not be anything wrong with their car. And I think you're going to have a huge public credibility problem if it does cite a lot of failures when they're really positives. So that would be our only major problem.

Mr. BARTON. Mr. Haddad.

Mr. HADDAD. Mr. Chairman, we believe that the remote sensing should be mandatory. But I would like to clarify something with regards to Pennsylvania. Pennsylvania, after they signed a contract with Envirotest Testing Systems, had such an uproar in the public and such outrage, and so hundreds of thousands of petitions were signed by the citizens. The State legislature passed a law, the Governor vetoed it, they overrode the Governor's veto. According to this law, there will not be centralized test-only in Pennsylvania.

The only thing there will be will be a hybrid program or decentralized.

Mr. BARTON. Mr. Leonard.

Mr. LEONARD. Yes, sir. We believe that remote sensing could be an element in a comprehensive program.

Mr. BARTON. And Mr. Strauss.

Mr. STRAUSS. We also support remote sensing within certain limitations.

Mr. BARTON. I'd like to point out, on this question about false positives and things in IM240 in Texas. In January when they put IM240 in place for 1 or 2 weeks, some enterprising reporter took a vehicle, took his or her vehicle to a station, one of these centralized IM240 stations and put it through at different times of the day. One time it passed, the next time it didn't pass. They then went to other stations and they found that the same car was passing sometimes, failing sometimes. And this is this IM240 paragon of American technology and defender of clean air.

Mr. DASKAL. Actually, it's Japanese.

Mr. BARTON. Well, it was at least located in Dallas, Texas or Dallas County. So there are problems with IM240 above and beyond some of the human problems of trying to implement it.

We are going to adjourn this hearing. Mr. Longley?

Mr. LONGLEY. I would ask if it would be appropriate to ask one of the witnesses to submit a language comparison as part of the record.

Mr. BARTON. Without objection.

Mr. LONGLEY. If you could provide that, that would be tremendous.

Mr. DASKAL. EPA speak versus English.

Mr. LONGLEY. Particularly, you mentioned the distortion of definitions or terminology from the act to the regulation. I would suggest that might be helpful to the committee.

Mr. BARTON. Thank you. We want to thank you gentlemen for attending, again, in certain circumstances under short notice. We will reconvene for our second day of hearings on this subject tomorrow

morning at 10 a.m. Tomorrow's hearing will be down in room 2123, the big room downstairs. We're adjourned.

[Whereupon, at 2:49 p.m., the subcommittee was adjourned, to reconvene on Friday, March 24, 1995, at 10 a.m.]

[Responses to subcommittee questions follow:]

RESPONSES TO SUBCOMMITTEE FOLLOW-UP QUESTIONS BY HUEL SCHERRER AND DAVID B. KITTELSON

Question 1: Mr. Austin testified before this Subcommittee on March 24th that less than 10 percent of vehicles are "clean for a day". Dr. Lawson and Dr. Stedman have testified that this number is much higher. Does your research indicate whether the clean for a day theory is present in Minneapolis? Does your research indicate that this is a minor or major problem?

Response: Our research only permits an overall, or "bottom line" measurement of I/M effectiveness for the Minneapolis/St. Paul program. This is because ambient air quality monitors measure the aggregate vehicle carbon monoxide (CO) levels at the hot spot (busy intersection) locations at which they are operated.

Anecdotal evidence indicates that many people are aware of reversible adjustments or alterations which are directed at "passing the test" without effecting useful maintenance or repair. Local television news segments have demonstrated one type of reversible carburetor adjustment people may be performing on older cars (videotape copy attached).

Question 2: In testimony before this Subcommittee on March 24th, EPA stated that your study is invalid because of variables, such as number of vehicles, vehicle miles traveled, etc. Is this a valid criticism? How has your study dealt with these variables?

Response: We carefully examine intersection vehicle traffic counts, traffic signal timing, CO monitor position and elevation, intersection geometrics, and growth in vehicle miles traveled (VMT). We find no reason to believe these variables introduced a significant bias in our comparative results. As previously noted by Taio et. al. (below), growth in traffic counts and VMT is incorporated in ambient analysis by combining this with a factor representing the continuous reduction in average individual vehicle emissions. These average emission reductions are due to the continuous updating of the vehicle fleet by cars with improving emission control technology. Thus, ambient data analysis differentiates these slowly changing effects from any set change in ambient emission levels which would indicate emission reductions due to vehicle Inspection/Maintenance.

Question 3: EPA testified that other ambient studies, such as a study by Tiao, indicate the benefits of I&M programs. What were the conclusions reached in the Tiao study? If the conclusions reached by Tiao are different than those reached in your study, how do you account for the difference?

Response: The ambient data study by Tiao et. al. (1) is of the Portland, Oregon I/M program, which began performing inspections in 1975. Three ambient CO monitor sites examined showed ". . . no evidence of a significant additional benefit due to the I/M program." (Tiao, p. 32 and p. 33). One site showed a 12 percent reduction in CO levels when changes in the monitor location and known traffic disruptions are not taken into account. When changes at this site were considered, the result is ". . . an average benefit of 6.1 percent (as compared to 12 percent before." (Tiao, p. 30). The 6.1 percent I/M benefit for this site is not statistically significant at the 5 percent level (Tiao, Table 4.3).

Summarizing Tiao's results:

Site	I/M Benefit (Percent)
1 (Alder)	−6.2 ± 14.0
2 (Lloyd)	2.9 ± 20.1
3 (Hollywood)	1.1 ± 8.6
4 (CAMS)	6.1 ± 7.7
Average Result	1.0 ± 6.8

Conclusions sometimes stated from this study are "In the years that when most Portland vehicles received their inspections, ambient CO concentrations were 8% to 15% less than they would have been without the I/M program." These conclusions, attached by EPA to this report, are at best a selective interpretation of these reported results.

Even if one accepts EPA's conclusions regarding 1970's I/M benefits, vehicle emission control technology has evolved considerably in the intervening years. 1960's and 70's cars are more likely to have shown I/M benefits because of the frequent maintenance—with a greater sensitivity to periodic service adjustments—required by their emission controls. Current computer controlled vehicle emission systems are less sensitive to simple, periodic maintenance. On-board diagnostic systems, which will be introduced in the near future, will further challenge the relevance of I/M programs. In summary, we are aware of no inherent conflict between our study and prior ambient studies.

Question 4: Are you familiar with the emissions testing program in El Monte? If so, do you consider this a real world measure of the effectiveness of a centralized IM240 test program? Do you believe this is good data to make decisions about the effectiveness of an I/M program, or to draw general conclusions about the accuracy of the model? If not, please explain why not.

Response: We have no firsthand knowledge of this particular study. The structure of this type of study examines "best case" results, without consideration of how human behavior will effect an actual I/M program.

Question 5: Assuming that 80–90 percent of CO comes from automobiles, is it possible that a 30 percent or even a 10 percent reduction in CO occurred in Minneapolis but did not show up on the same monitors that determine nonattainment status?

Response: The monitors we studied measure ambient CO from vehicles operating under fully warmed conditions, i.e., conditions most likely to show benefits from an I/M program. A significant source of additional CO emissions from vehicles (40% to as much as 80%) occur under "cold start" conditions (2). These cold start CO emissions are not measured by I/M testing, and are inherent in vehicle design. Therefore, the suggestion that I/M produced substantial reductions in total CO emissions, without affecting corresponding reductions in these ambient measurements, is highly implausible.

Question 6: The National Research Council in Rethinking the Ozone Problem in Urban and Regional Air Pollution (1991) stated the following in its executive summary: "air quality models that use ambient data instead of emissions inventories to identify important precursors sources, to verify emissions algorithms, and to determine ozone precursor relationships could serve as useful checks of models that require the entry of accurate data from emission inventories." (Page 8) Do you agree that air quality models that use ambient data instead of emission inventories should be used?

Response: Yes. Models have no meaning unless they are calibrated against reality. Furthermore, models that are not verified by ambient measurements can distort priorities in addressing air quality concerns, and lead to poor public policy by misdirecting limited resources.

Question 7: Dr. Lawson and Dr. Stedman have suggested a two or three year comparison between various program types to measure the effectiveness or noneffectiveness of I/M. Do you agree that this should be done before implementing more I/M programs?

Response: Yes. Comparisons should be carried out through examination of ambient air quality data and in-use emission measurements of vehicle populations. Comparative measurements would provide a more realistic measurement of I/M effectiveness than identification-repair projections or I/M self-evaluations.

Question 8: Do you agree with EPA that there are only a few people qualified to peer review the model? What qualifications should EPA look at in choosing a peer review panel?

Response: No. The claim that only a few people are "qualified" to evaluate or reproduce a scientific construct should send clear warning signals as to the potentially subjective nature of the model. Given the importance of the regulatory model in directing public policy decisions, an independent review should be directed under the auspices of the National Academy of Sciences.

Reference:

1. "Statistical Analysis of the Effect of I/M on Carbon Monoxide Air Quality in Portland, Oregon", Taio et. al., University of Wisconsin for EPA, No. 460/3-81-016, May 1981.

2. Larson, R.E., "Vehicle Emission Characteristics Under Cold Ambient Conditions", SAE Paper 890021, January, 1989.

RESPONSES TO SUBCOMMITTEE QUESTIONS BY DONALD STEDMAN, BRAINERD PHILLIPSON PROFESSOR OF CHEMISTRY, UNIVERSITY OF DENVER

Question 1: During its March 24th hearing, the Subcommittee heard testimony that a remote sensing reading is a snapshot in time which does not correlate with stop-and-go driving. How do you respond? What data or analysis do you have to support this belief?

Response: Remote sensing is indeed a "snapshot in time" of on-road emissions. If the cars are doing stop-and-go driving when measured, the measurements are real, on-road, stop-and-go driving emissions. If the cars are going at a steady 30/mph then this is not stop-and-go driving, and the correlation with a test which is based upon such driving will not be as good. The important point is that on-road emissions such as measured by remote sensing are the parameter which needs to be controlled if air quality is to be improved. If some other test does not correlate with a real measure of on-road emissions, then is that a problem for remote sensing or for the test which is usually described as a surrogate for the real thing?

The data published from the Rosemead Study (A032–093, Feb. 1994 Cal. Air Res. Board) show that when on-road remote sensing is used to pull over gross polluters, 92% fail an immediate idle test (even though few were measured at idle), and 66 of 69 fail an IM240. The data published recently from the Sacramento study show that vehicles measured under 0.5%CO are always low on IM240 HC and CO.

Question 2: In testimony before this Subcommittee on March 24, Mr. Tom Austin of Sierra Research stated that IM240 variability is a minor problem. Do you agree with this? How big a problem is IM240 variability? In general, how variable are tests from one point in time to another?

Response: Mr. Austin is correct that IM240 variability is minor in the sense that a minor proportion of the fleet show variability; unfortunately, that minor portion of the fleet emit a major portion of the fleet emissions. The attached graph shows IM240 emissions measured and reported by the EPA. Note that the low emitters are numerous and show little variability whereas the high emitters are a problem. The report referenced above also notes that emissions variability on any scheduled test severely limits the benefits which that test can expect. For instance, suppose that only 14% of the fleet are broken and they show randomly variable emissions. If 1,000 vehicles are tested on a given day, 930 pass and only 70 fail. Of the 70 which fail, without repair, 35 will pass on their first (free) retest. Eventually all will pass, the failure rate will be 7% (as reported in Colorado), the emissions of failures will be greater fanfare in Colorado) and no meaningful emissions reductions will have taken place.

Question 3: How well does remote sensing correlate with IM240 when tests are conducted with on-road vehicles on the same day? Is this the most important measure of the effectiveness of remote sensing?

Response: Remote sensing correlates with IM240 the same day (see above) but correlation is a tree which should not be confused with the forest. An I/M program is supposed to identify, diagnose, repair and verify the repair of the on-road gross polluters. Remote sensing has long since been shown to be a very cost-effective way of finding them. We should really not be wasting any more time and money on how to find them: we should be working to ensure that the last three vital steps of the program are carried out correctly.

IM240 is undoubtedly a "better" test than remote sensing, but 16 stations with about 100 lanes can only measure 4,000 cars per day in Colorado at $25 each. A single remote sensor costing less than one lane can do the same or more cars per day without inconveniencing a single driver.

Question 4: Before this Subcommittee on March 24, EPA testified that the IM240 centralized program in Arizona is an example of a very effective I/M program. What information do you have to support or contradict that testimony?

Response: The self declared effectiveness of the Arizona centralized program has never stood the test of independent scrutiny. In 1988, the Arizona Auditor General discussed its lack of effectiveness and the incentives for mechanic cheating. Our studies in Tucson in 1994 (see earlier testimony) showed no detectable difference between the vehicles in and not in the I/M program. EPA surveys (one cannot help but wonder why they were discontinued, perhaps so no-one could see that the "new" programs did not work?) show some of the highest tampering rates measured anywhere in their Arizona data. The new Arizona IM240 program may be more effective but 100% better than zero is still zero.

Question 5: The Subcommittee heard testimony that remote sensing can never be a substitute for annual testing because it cannot measure NO_x. Will the remote sensing device ever be capable of measuring NO_x? How far along are you in that

regard? When would you expect that an effective NO_x channel will be ready for commercial use?

Response: Every time we have improved the remote sensing technology the EPA has come up with a new reason why it cannot substitute for scheduled I/M. In actual fact there have never been any data which justify the original imposition of scheduled I/M: it has just become a habit. Who would ever contemplate scheduled breathalizer testing for drunk driving?

We have been using a prototype NO_x detector for over two years now. Data are in process of peer-reviewed publication. NO emissions are dependent upon vehicle load, as well as maintenance. The highest emitting CO and HC vehicles have no detectable NO emissions at the time of testing. Commercial systems with NO capability have been ordered and sold.

Question 6: Do a small minority of cars cause a majority of pollution in stop-and-go driving? What is the overlap between gross polluting CO, HC and NO_x emitters? What percent of excess reducible emissions are accounted for by the worst emitting 10 percent of the fleet?

Response: All studies using all tests show that a small fraction of the vehicles cause a large fraction of the emissions, and according to recent California repair studies, an even smaller fraction (the really gross ones) can be expected to be successfully repaired.

In on-road data, 50% of the CO comes from about 8% of the fleet and for HC about 10%. 6% are in common, so to get 50% of CO and HC you need 6+4+2 = 12% of the total vehicles.

Question 7: You testified that when a gross emitting CO emitter is fixed, it results in large reductions of NO_x. What support do you have for this statement?

Response: The Michigan study pulled over gross polluters, mostly for CO. The results which are now published in several places such as ("Michigan Roadside Study: Emissions Intercomparison and Repair Effectiveness", McAlinden, et al, CRC Fourth On-Road Emissions Workshop, Mar. 18, 1994) show that for 1986 and newer vehicles, 90% CO and HC and more than 40% NO_x reductions are obtained when expert repairs are done and verified with the use of the FTP test. The reasoning is that even through NO was not being emitted at the time of the test, the high CO indicates an out-of-control computerized air/fuel system which on a longer FTP test wanders randomly around between high NO and high CO and HC conditions. When repaired, the air/fuel system is locked at stoichiometric where all emissions are minimized.

Question 8: In testimony before this Subcommittee on March 24, EPA stated that they intend to have MOBILE5A peer reviewed this summer by non-EPA experts. EPA goes on to state that there is a limited pool of people in the world who could fairly evaluate whether the model works or not. What qualifications do you believe EPA should look for in choosing peer reviewers?

Response: There are two groups (Pitchford and Johnson, and Harrington and McConnell) which have published peer reviewed computer models which compete with MOBILE: at least one author from each should be included. MIT and Cal Tech have authors who should be invited. At least one Canadian expert should be found if possible because most model users are paid by the USEPA and thus have a conflict of interest when it comes to model evaluation.

Question 9: Do you believe that a centralized IM240 test program would be susceptible to the "clean for a day" phenomenon? What evidence if any do you have that IM240 can be cheated on?

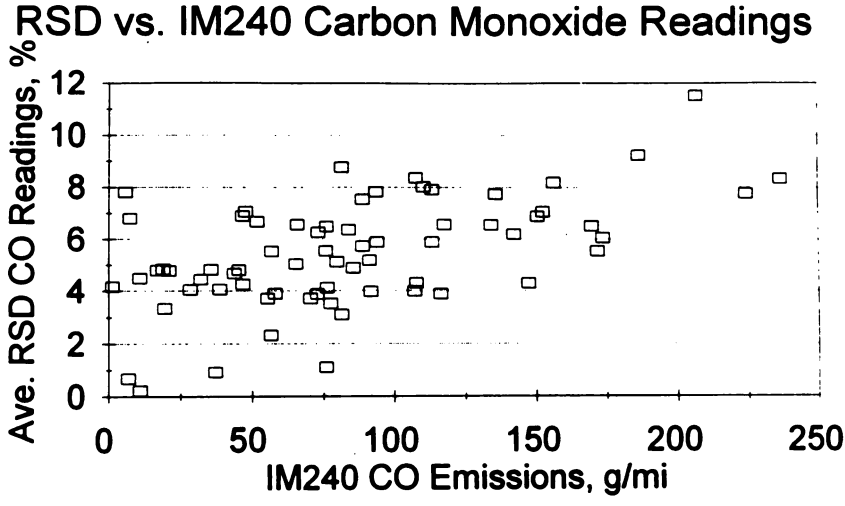
Response: The minutes of the January California I/M Review Committee contain verbatim observations by mechanics in CA that IM240 can be cheated upon. Auto manufacturers have been "cheating" on the FTP for 25 years. If you are an automaker it is called "teaching the car to pass the test".

Question 10: In testimony before this Subcommittee on March 24, Mr. Tom Austin testified that vehicles that are "clean for a day" comprise less than 10 percent of the tested fleet. You state that the "clean for a day" phenomenon is a much larger problem. What is your evidence to support this statement?

Response: Suppose for a moment that Mr. Austin is right and "Clean for a Day" effects less than 10 percent of the cars. Those ten percent can nevertheless constitute more than 50% of the emissions, and almost all of the emissions which should be easily repairable if properly repaired. The "Clean for a Day" problem (see the attached document of that title) may be only 10% of the vehicles, but may be almost all of the otherwise repairable emissions; thus, a "much larger problem" than implied by Mr. Austin.

Attachments: "Clean for a Day" (Publication is retained in the Subcommittee files.)

1991 Rosemead Study



Questions for Mr. Joel Schwartz or Ms. Lynn Scarlett

1. During this Subcommittee's March 23rd and March 24th hearings on Inspection and Maintenance, much testimony was given regarding the Sacramento RSD pilot program. Mr. Austin testified that the Sacramento study showed that "[o]nly about 10 percent of excessive HC and CO emissions in the fleet are identified with a remote sensing program", and that" over half of the vehicles failing an RSD test are expected to be false failures". The California I/M Review Committee has since issued a paper by Mr. Joel Schwartz attempting to clear up misconceptions about the Sacramento pilot program. For the record, could you please summarize for the Subcommittee what these misconceptions are?

2. Radian Corp. issued a report on March 31, 1995 for the California Bureau of Automotive Repair evaluating the Sacramento study. What conclusions does Radian Corp. reach regarding the potential effectiveness of a remote sensing program? Do you agree or disagree with these conclusions? Why or why not?

3. During the same Inspection and Maintenance hearing, this Subcommittee heard evidence about the El Monte, CA. pilot study. It was indicated to the Subcommittee that this was real world evidence that a centralized IM240 test program would result in upwards of 30 percent emission reductions. Do you agree or disagree? Please explain?

4. During testimony before this Subcommittee on March 24, EPA stated that its discount of test-and-repair programs was based on emissions tests, not on audit or tampering data. The California I/M Review Committee has already come to the conclusion that EPA's audit and tampering data does not support the 50 percent deduction. Has the Review Committee analyzed and come to any conclusions about the emissions data EPA now relies on for the discount?

5. There was much testimony about the "clean for a day" phenomenon, with some witnesses stating it is a minor problem, and others a significant problem. What is the Review Committee's view? If you believe this problem is significant, would it continue to be a problem in a centralized IM240 test program? Please explain?

Responses to Subcommittee Questions by Joel Schwartz, Special Consultant, and Lynn Scarlett, Chair, California I/M Review Committee

Response to Question 1[1]

Summary

Mr. Austin's claim that the Sacramento data show RSD to have a high false failure rate, and to be incapable of detecting many excess emissions is incorrect. Other studies that compare RSD and dynamometer tests show RSD to capture most excess emissions with few false failures. The Sacramento data are not suitable for comparing RSD to dynamometer tests for the following reasons:

- The RSD and IM240 measurements were separated by about three months. Previous data have demonstrated that cars show intrinsic variation between tests even over periods of hours or days. Other potential sources of variation include maintenance, changes in ownership, changes in license plate, etc.
- Oxygenated gasoline was introduced for the IM240 testing period but not during the RSD testing period. Oxy-fuels reduce CO emissions by about 20% and HC emissions by about 10%.
- The Radian Report show that about 41% of the RSD sites were not suitable for an RSD program, because they created high accelerations and loads. Mr. Austin did not remove these sites from his analysis.

When RSD and dynamometer testing are performed at the same time, RSD captures most excess emissions with a low rate of false failures.

A number of studies have measured cars with both RSD and a dynamometer test, with both tests occurring at about the same time. These studies achieved results at odds with the claims of Mr. Austin (see Austin and Heirigs, 1995; Austin, 1995). We review the results of these studies below:

- In 1991, Doug Lawson, then at the California Air Resources Board,[2] tested 76 cars on IM240 that were above either 0.25% HC or 4% CO on two consecutive on-road RSD readings. Seventy-three of the 76 cars failed the IM240 using EPA's IM240 cutpoints.[3]
- In 1992, Bob Stephens of GM pulled over 119 post-1980 vehicles measured by on-road RSD and tested them on IM240. This sample of cars in non-random in the sense that Stephens pulled over a higher percentage of cars that are high emitters on RSD

[1] The questions are included at the end of this document.

[2] Thanks to Doug Lawson, Bob Stephens and Mark Carlock for supplying the data sets that we analyzed for this paper. Lawson is now a professor at the Desert Research Institute in Reno, Nevada.

[3] Cutpoints are the following:

Model Year	HC	CO	NOx
1983+	0.8	15.0	2.0
1981-1982	0.8	30.0	2.0
1980	0.8	30.0	4.0
1977-1979	3.0	65.0	4.0
pre-1977	3.0	65.0	6.0

than would be found in the actual on-road population. Using EPA's IM240 cutpoints, of the 119 vehicles, 62 passed and 57 failed on the IM240 test. The results for excess emissions captured by RSD and errors of commission were the following:

Table 1

Excess IM240 Emissions Captured by RSD[4]

Method: Using RSD readings, fail the following cars:

- highest 20% of CO emitters (RSD cutpoint of 5.5%)
- highest 15% of HC emitters (RSD cutpoint of 0.094%)

	HC	CO	NOx
Excess Emissions Captured[5]	78%	71%	33%

With the cutpoints in Table 1, above, RSD improperly failed 4 vehicles out of the 119 vehicle sample.

Stephens' data can also be used to determine whether RSD is effective in finding cars that will pass a dynamometer test. If RSD is effective in this role, cars could then be excused from their periodic test based on low on-road RSD readings. We analyzed what would happen if the cars that were in the lowest 25% of RSD emissions for both HC and CO were excused from their periodic test.[6]

Table 2

Excess Emissions Lost if Cars Excused from Periodic Test Based on Low RSD Readings[7]

	HC	CO	NOx
Excess Emissions Lost	0.3%	0%	13%
Percent of Cars Excused from Periodic Test	16%		

[4] Excess emissions are determined by IM240 results using EPA cutpoints given in Footnote 2.

[5] When we testified before the Oversight and Investigations Subcommittee, we reported that RSD captured 65% of HC excess emissions from this group of vehicles. We looked only at RSD HC emissions in that analysis. The higher level reported here is due to the inclusion of both HC and CO RSD results. Since HC and CO emissions are somewhat correlated, cars that fail for CO sometimes have excess HC emissions as well (and vice versa).

[6] RSD cutpoints in this case were HC: 0.009%, CO: 0.51%. Under this scenario, cars measured to be below both cutpoints would be excused from further testing.

[7] Cars in lowest 25% for both HC and CO excused from periodic test. IM240 cutpoints are given in Footnote 2.

As Table 2 shows, without actually measuring NOx emissions, RSD can still be used to excuse a substantial percentage of vehicles from their periodic test, while still capturing the vast majority of excess emissions.

- In 1993, the California Air Resources Board measured 556 cars on RSD three times for both HC and CO and then tested the same cars on the FTP. In this case, the cars were measured by RSD under controlled conditions. Thus, this test is analogous to what could happen if RSD were used as a pre-screen for cars at a centralized test station. We analyzed the data for the 405 post-1980 cars in the data set. We compared the average of the three RSD readings to the FTP. The FTP cutpoints were set at twice the certification standard for each pollutant (CO: 14.0, HC: 0.82, NOx: 1.4, all in grams per mile). RSD cutpoints were set so that cars that were in the lowest 50% of RSD emissions for each of HC and CO were excused from further testing. Note that errors of commission are not an issue here because we are assuming that all cars will have a scheduled dynamometer test. We are only asking whether RSD can be used as a fast pre-screen to allow some cars to avoid further testing. The results are presented below:

Table 3

Excess Emissions Captured with RSD as a Pre-Screen for Dynamometer Testing

	HC	CO	NOx
Excess Emissions Captured	93%	96%	85%
Percent of Cars Excused from Further Testing	34%		

As all three of the above studies show, RSD is very effective in identifying cars with excess emissions without improperly identifying a substantial number of low emitting cars.[8]

Based on his analysis of the Sacramento Pilot Study data, Mr. Austin concluded that RSD had a high false failure rate (50% error-of-commission rate), and did not capture many excess emissions (only 10% of excess emissions captured). Mr. Austin achieved results that are at odds with the results of the RSD studies presented above for at least the following three reasons:

[8] The data we analyzed come from Doug Lawson of Desert Research Institute, Bob Stephens of General Motors, and Mark Carlock of ARB. We would be pleased to have our results checked by any interested party.

1. In the Sacramento Pilot Study, RSD and IM240 measurements were separated by about 3 months. As shown above, studies that perform dynamometer and on-road RSD testing at the same time have found that RSD performs well when compared with dynamometer tests. Thus, differences between RSD and IM240 that Mr. Austin attributes to inaccuracy of remote sensing probably were actually due to intrinsic variability of the vehicles themselves during the 3-month period between the two tests.

   The fact that cars show intrinsic variation between tests is well known. USEPA's own IM240 data show emission-test variability. In one study, when cars were given two IM240 tests at EPA's laboratory, the coefficient of determination[9] (r-squared) between the two HC tests was 0.73. When one IM240 was performed at a test lane, and the second one was performed at USEPA's lab within a few days afterwards, the r-squared dropped to 0.62 (ARB, 1994). Similarly, Knepper et al. (1993) performed multiple FTP tests on high emitting vehicles. They found that HC emissions varied between successive FTP tests by up to a factor of 12. In both of these studies the cars were given multiple dynamometer tests over a period of days and the cars were under the control of the researchers. In the Sacramento study, the period between tests was much longer (about 3 months), allowing not only for the cars to be driven, but also to receive maintenance, changes in ownership, changes in license plate, etc., all of which might result in differences between the IM240 and RSD emission measurements.[10]

2. During the RSD phase of the Sacramento Pilot Study, non-oxygenated gasoline was being sold in the Sacramento area. During the IM240 phase of the study, oxygenated gasoline was being sold in the Sacramento area. Oxygenated gasoline reduces CO emissions by 15% to 20%, on average, and reduces HC emissions by about 10%, on average (Singer and Harley, 1995). The introduction of oxygenated gasoline between the time of RSD and IM240 testing would increase the apparent rate of "false failures" by RSD, when compared with IM240, for reasons that have nothing to do with RSD's ability to detect high emitting vehicles. Mr. Austin did not account for this effect in his evaluation of the Sacramento RSD data.

3. In the Sacramento Pilot Study, a preponderance of the RSD sites were freeway on-ramps. The California Bureau of Automotive Repair (BAR) chose these sites with the hope of maximizing vehicle coverage. However, in doing so, BAR sacrificed the quality of the RSD readings because on-ramps are sites of high acceleration and high load. Vehicles under high acceleration and/or high load can have high emissions even when functioning properly.

   For example, in its analysis of the Sacramento data (Radian, 1995), Radian first removed all RSD sites from its calculations where more than 5% of 1993 and newer

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[9] The coefficient of determination (r-squared) is the square of the coefficient of correlation (r) and has a value between zero and one. R-squared is the proportion of variation on one test that can be predicted by another test. Thus, if the r-squared between to IM240 tests is 0.8, then the result on the first test predicts the result on the second test to within plus or minus 20% (and vice versa).

[10] For example, a secretary in my office was selected for an IM240 test and had also driven by the RSD on a number of occasions. She told me that her car's engine had been rebuilt shortly before the IM240 test, but after the RSD program had ended. Although only anecdotal, and probably not typical in its degree of "engine variability" between tests, many sources of variability during a three month period are likely.

vehicles had CO readings above 1% (for comparison, previous RSD studies in California have found that fewer than 1% of new cars have CO readings above 1% (ARB, 1994)). By this criterion 137 out of 337, or 41% of RSD sites, were unsuitable for collection of RSD data useful for I/M purposes. Mr. Austin did not take account of site selection effects in his evaluation the Sacramento RSD data, but included all of the RSD data in his analysis.

Response to Question 2

The Radian report (Radian, 1995) concluded that "mechanisms can be developed to identify high emitting vehicles based upon RSD measurements while minimizing problems with false failures" (page 3-83 of Radian report). Radian found false fail rates for RSD of about 25% with 50% of excess HC and CO emissions identified (figure 3-46 of Radian report). Radian showed that these numbers could be improved by screening for high accelerations and by using a technique called high emitter profiling (HEP), in which vehicles are targeted based on a number of factors, including age, mileage, engine class, and inspection history. However, as with Mr. Austin's analysis, Radian's RSD analysis also compares RSD to IM240 measurements taken about 3 months later, and does not account for the different gasolines in use during each testing period. Thus, as shown above, the actual ability of RSD to identify both gross polluters and low emitters is better than either Mr. Austin's or Radian's analyses would suggest.

A further complication in evaluating the Sacramento RSD data has recently come to light. The BAR recently published its evaluation of the performance of the RSD units used in the Sacramento study (BAR, 1995). These RSD units were supplied by two companies, Santa Barbara Research Center (SBRC) (a division of Hughes/General Motors), and Remote Sensing Technology (RST) (a division of Envirotest). To evaluate the repeatability and accuracy of the individual RSD units, BAR compared RSD emission results to both emissions measured by instruments mounted on a drive-by vehicle, and also to prepared gas mixtures of known composition. BAR reported correlations (reported as "r-squared") of the RSD measurements with the on-board instruments as follows:

Table 4

Results of BAR Comparison of RSD Units With Instrumented Vehicle

	R-Squared	
Company	**CO**	**HC**
SBRC	0.59	0.13
RST	0.76	0.33

Previous studies have found much higher r-squared's than those obtained from the RSD units in the Sacramento study, as shown in the table below.

Table 5

Recent Results Obtained in Comparisons of RSD Units With Instrumented Vehicles

	R-Squared	
Reference	**CO**	**HC**
Lawson (1990)	0.97	
ARB (1994)	0.98	0.85
Stedman (1995)	0.97	0.99

It is not yet clear why the RSD units in the Sacramento study performed poorly when compared with the state of the art in RSD technology. Anecdotal reports suggest that the schedule set by BAR for the project put SBRC and RST under time pressure that prevented some hardware and software bugs from being worked out before data acquisition began. Both SBRC and RST are expected to release reports clarifying these issues in the near future. In any case, these results suggest that at least some of the Sacramento RSD data may be of lower quality than what could be obtained in an actual on-road RSD program.

Response to Question 3

The El Monte Study did not and could not evaluate what would happen in either a centralized or decentralized I/M program. The El Monte study was "real-world" only in the sense that real cars were repaired by real people and their emissions were measured on real test equipment. However, the El Monte study was a controlled study that excluded many of the important features of an operating I/M program. The El Monte study deviated from a real-world I/M program in at least the following ways:

- Vehicle repairs were paid for by the state. Vehicle owners did not have to spend any of their own money to repair their cars.
- The mechanics in the study were instructed to repair the car to the best of their ability within a $500 dollar cost limit (and to repair all tampering without regard to cost). The mechanics were not encouraged to keep costs down, as they would be in a real-world motorist-mechanic interaction.
- Mechanics were not asked by vehicle owners to make the car simply pass the retest without necessarily making meaningful or expensive repairs as they would often be in a real-world I/M program (see response to question 5).

- Expert mechanics were chosen to repair the cars in the El Monte study. The average real-world mechanic has a lower level of skill than the mechanics in the El Monte study.
- The ARB conducted testing under very controlled conditions. The tests were conducted by highly educated and trained scientists, engineers and technicians in a laboratory facility not designed for high throughput. In an operating centralized I/M program, tests are typically administered by unskilled laborers and under significant time constraints to maintain high throughput.

In other words, the most important factor affecting whether cars are repaired, human behavior, was not included in the El Monte study. The El Monte Study thus represents a "best case" of what could be achieved if all motorists, mechanics, and regulators cooperated with an I/M program's goals. Real-world avoidance behavior would result in lower emission reduction effectiveness than what was achieved in the El Monte study.

In short, the El Monte study was not designed to assess any proposed differences in effectiveness between centralized and decentralized testing. Since the El Monte study deviated from a real-world situation in significant ways, it was not capable of addressing this issue.

Response to Question 4

Summary

EPA continued to cite its audit and survey data as the main support for its 50-percent discount until those data were thoroughly critiqued by the I/M Review Committee in February, 1995. EPA then began to claim that it relied directly on vehicle emission data to develop its 50-percent discount. EPA compared IM240 emissions from cars arriving for their scheduled test in Phoenix, Arizona with IM240 emissions of cars solicited in El Monte, California with a promise of free repairs. Finding that the Phoenix cars had lower HC and CO emissions than the El Monte cars, EPA concluded that Arizona's centralized I/M program is superior to California's decentralized I/M program. However, EPA's comparison uses statistically biased data sets, and an unsound methodology. For example,

- Recruitment bias: The Phoenix cars were solicited as they arrived for their inspection. Studies (including studies in Phoenix) show that motorists prepare to make their cars lower emitting on the day of the test then they are on the road (see response to question 5). The El Monte cars were solicited with a promise of free repairs, an inducement which probably encouraged receipt of more broken cars.
- EPA did not correct for difference in vehicle mileage. Phoenix has a large population of retirees that spend only part of the year there. Thus, Phoenix cars may be lower mileage on average, and lower mileage cars are also lower emitting on average.

- EPA's Phoenix sample did not include and light duty trucks, while the El Monte sample did. Light duty trucks are higher emitting than cars.

The Sacramento pilot study collected IM240 data on about 3000 post-1981 vehicles. Figures 5, 6 and 7 show that the Sacramento sample has much lower emissions than the El Monte sample. The Sacramento cars have lower NOx emissions than the Phoenix cars, similar CO emissions, and higher HC emissions.

Even though EPA's claim that the Arizona's cars are lower emitting than California's cars is incorrect, the larger issue is that a comparison of emissions in two different cities does not provide information relevant to I/M effectiveness. There could be many factors that are different between different cities, such as wealth, vehicle maintenance behavior, vehicle mileage, driving behavior, and other demographic factors. The real question, unanswered by EPA (and unanswerable by EPA's intercity comparison), is whether cars in Arizona or California have lower on-road emissions after inspection than they did before. Studies that have asked this question have found the answer to be "no" in both states.

EPA, in responding to the I/M Review Committee's evaluation of the USEPA's 50-percent discount (EPA, 1995a; EPA, 1995b; Schwartz, 1995a), and in testimony before the Oversight and Investigation Subcommittee, claimed that it did not rely on its audit and survey data in developing the discount, but instead relied on vehicle emissions data. The written record shows that this is not the case. When EPA published its I/M rule in November, 1992, EPA cited its audit and survey data, as well as California's recently published "1100 Car Study" in support of the discount.[11] In late 1994, we asked EPA to provide us with the data supporting the 50-percent discount. In response, EPA sent us two papers that rely almost exclusively on EPA's audit and survey data. **EPA continued to cite its audit and survey data as the main support for its 50-percent discount until the California I/M Review Committee presented the a thorough and substantive critique of these data in February of 1995 (Schwartz, 1995a).**

Starting this year, EPA has now stated that it relies on vehicle emission data for the discount, rather than on its audit and survey data. Specifically, in February, 1995, EPA presented a comparison of IM240 emissions from cars arriving for their scheduled I/M test in Phoenix, Arizona, with IM240 emissions from cars solicited by mail with a promise of free repairs in El Monte, California. Because the HC and CO emissions of the California cars were higher, EPA concluded that Arizona's I/M program is effective and California's I/M program is not effective. However, EPA's comparison uses statistically biased data sets, and an unsound methodology. We show below why this is the case.

Selection of vehicles is biased against California

ARB solicited cars in El Monte with a letter to vehicle owners that included a promise of a free Smog Check certificate, and, for failing vehicles, a free repair and free rental car. The letter also stated that the testing process would take three to four hours. The

[11] In our response to EPA (Schwartz, 1995b), we noted that if the 1100 car study results are compared with on-road and ambient measurements of I/M effectiveness, then California's I/M program must be judged the most successful in the country. We also showed that the 1100 car study most likely overestimates the effectiveness of California's I/M program by a large margin.

CO Emissions: Phoenix, Sacramento, El Monte

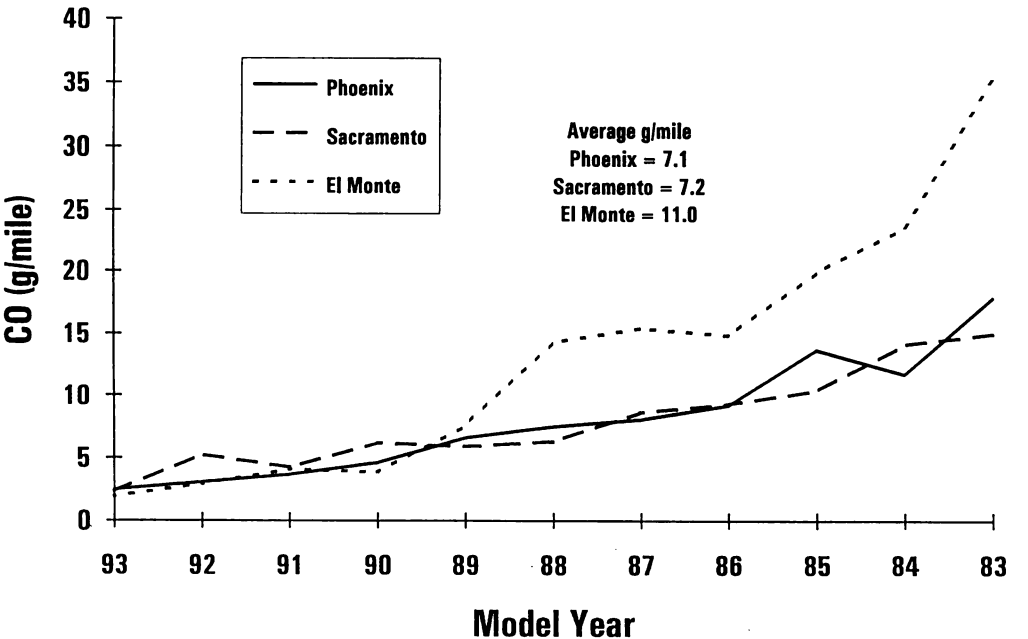

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Figure 6

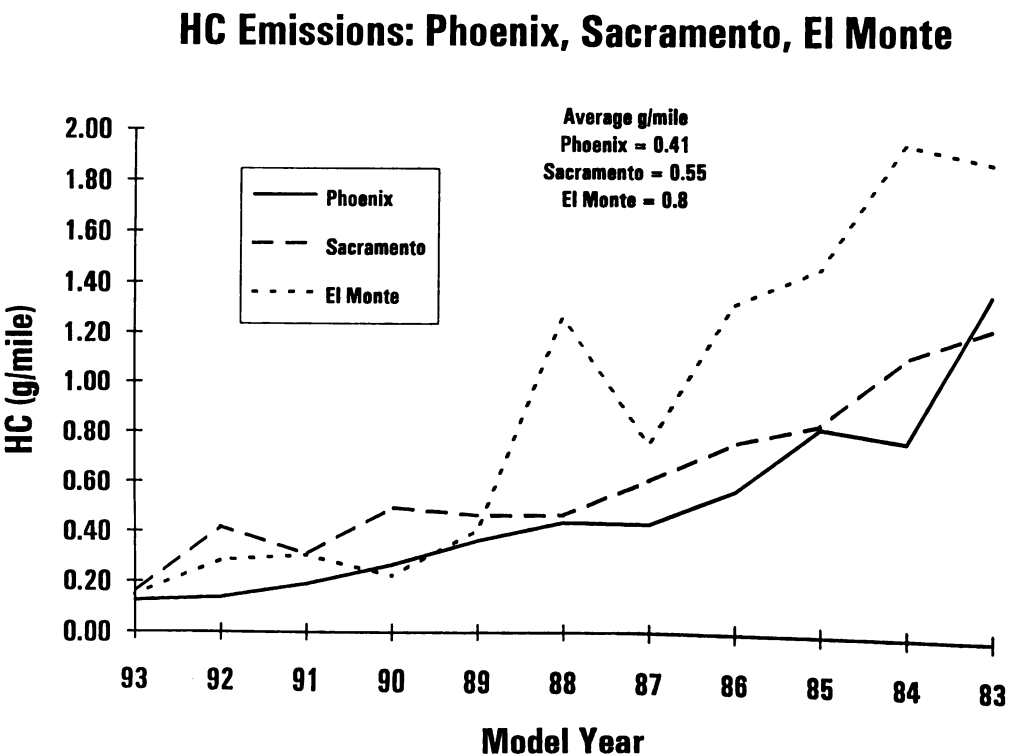
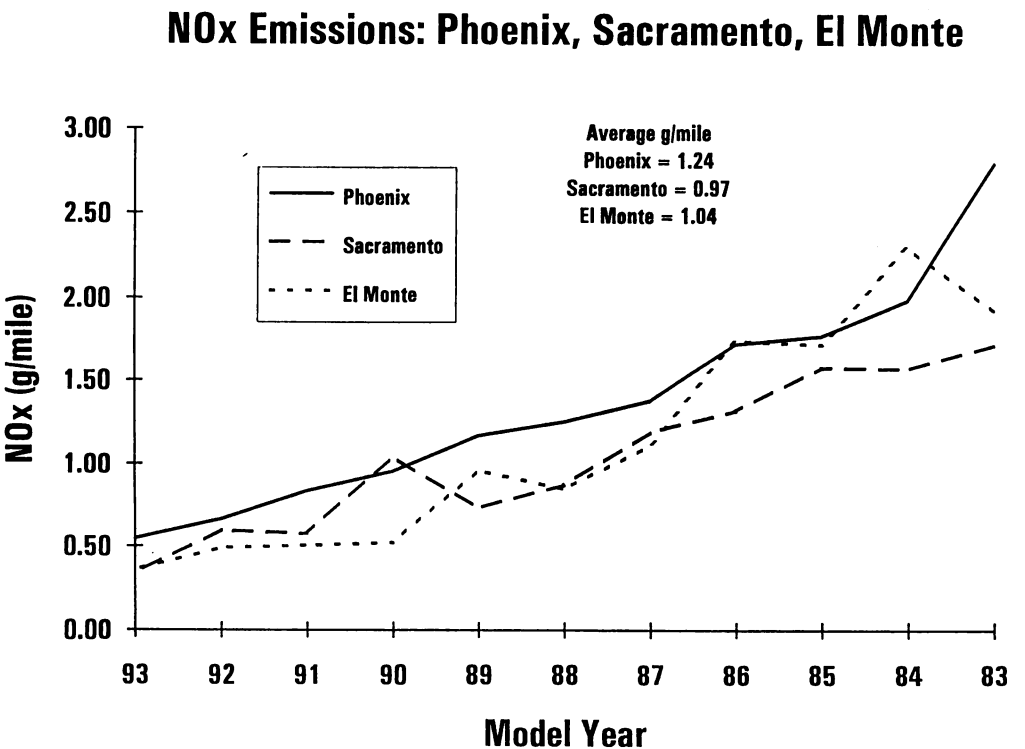


Figure 7



letter also stated that the owner was required to bring in the car, but did not mention any penalties for failure to comply. All solicited vehicles were due for their Smog Check within the next few months after the solicitation.

The El Monte recruitment method is likely to have encouraged owners of poorly maintained or broken vehicles to bring their cars in, due to the offer of free repairs and a free rental car. Furthermore, motorists who expected to pass their upcoming Smog Check might have been less willing to go through the hassle of bringing their cars to the El Monte study because fewer benefits were offered for passing cars. EPA has claimed that all solicited cars were eventually brought in because their were penalties for noncompliance (EPA, 1995b). In fact, only 61% of solicited cars were actually ever brought in to ARB's testing lab (Carlock, 1995).

EPA collected its Arizona IM240 data by soliciting cars as they arrived at a centralized test lane for their scheduled I/M inspection. The Arizona Auditor General has collected evidence showing that a significant number of Arizona motorists prepare to make their cars lower emitting for their emission test without altering their cars' emissions on the road (see response to question 5 below). Thus, EPA's Arizona IM240 results probably show lower emissions for Arizona cars than would be observed on the road.

In addition, EPA's Phoenix sample contains no light duty trucks, while the El Monte sample contains light duty trucks roughly in proportion to their representation in the on-road fleet. Light duty trucks have higher emissions than cars.

Thus, due to sampling bias EPA's comparison was skewed in favor of showing lower emissions for Arizona, and higher emissions for California than might actually be the case on the road.

EPA Did Not Correct for Differences in Vehicle Mileage

EPA did not account for differences in vehicle mileage between the California and Arizona fleets. Because EPA has not provided us with mileage data for the cars in its Phoenix sample, we cannot assess to what extent differences in vehicle mileage might have affected the results.

However, there is reason to believe that the Phoenix vehicles may be driven fewer miles on average than vehicles in California. This is because Phoenix has a substantial population of retirees who spend only the winter months in Phoenix.[12] Lower mileage vehicles are, on average, lower emitting than higher mileage vehicles.

Are Arizona Cars Lower Emitting than California Cars?

Below we compare Arizona vehicles with both the El Monte vehicles, and a sample of vehicles recruited for IM240 testing in Sacramento. The Sacramento vehicles were recruited by mailing solicitation letters to the vehicle owners. About 50 percent of the

[12] Elizabeth Deakin, Professor of Transportation and Urban Planning, UC Berkeley. Personal communication, March 17, 1995.

solicited owners brought in their vehicles for testing.[13] No repairs were involved, only an IM240 test. Because the recruitment procedure did not involve inducements of free repairs, and because the testing process took less than half an hour (rather than three to four hours in the El Monte study) we believe the vehicles obtained are less likely to be biased towards having more high emitters than the on-road fleet. The Sacramento data set contains about 3000 IM240 test results for vehicles in the 1983 to 1994 model years.

At our request, EPA sent us their IM240 data from Arizona in late February. The data set contains IM240 test results for about 1200 vehicles from model years 1983 to 1994. Note that when we compare Sacramento with Phoenix, the selection of cars in Arizona at the test lane still biases the results most probably in favor of Arizona. Also note that, like the El Monte sample, the Sacramento sample contains light duty trucks - another bias in favor of Arizona.[14]

The results of our comparison of the California and Arizona samples are presented in Figures 5, 6 and 7. Each figure presents the average emissions by model year for the Phoenix, Sacramento and El Monte Cars. Note that the Sacramento and Phoenix samples have similar CO emissions, the Sacramento fleet has lower NOx emissions, and the Phoenix fleet has lower HC emissions. Note also that the El Monte sample has substantially higher HC and CO emissions than either the Sacramento or Phoenix samples.

Table 4 presents the overall average emissions from the two fleets. To correct for the fact that the two fleets have a different model year distribution, we normalized the Sacramento sample to the Phoenix sample's model year distribution. We calculated average emissions for each fleet by weighting the emissions from each model year by the percentage of vehicles in that model year. Thus, we have compared Phoenix and Sacramento based on fleets of equal model year distribution. EPA did not provide odometer data for the Phoenix cars, so we could not normalize for differences in mileage between the two fleets. Emissions are positively correlated with mileage so differences between the two fleets would affect the results of this comparison.

Column A gives the average emissions for the Sacramento fleet. Column B gives the emissions from the Sacramento fleet that are above the new car certification standards (the California new car standards are CO: 7 g/mile, HC: 0.41 g/mile, NOx: 0.7 g/mile, for the vehicles in this study). Columns C and D give the same information for Phoenix (the Phoenix new car standards are (CO: 3.4 g/mile, HC: 0.41 g/mile, NOx: 1.0 g/mile, for the vehicles in this study).[15]

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[13] Using RSD readings, the Radian report shows that, for 1981 and newer vehicles, the solicited cars that came in for IM240 testing had CO emissions that were about 15% lower than those of the "no-shows." Since half of the solicited motorists brought their cars in, we would expect the IM240 emissions of the Sacramento fleet to be about 7% to 8% higher than what was actually measured, due to this selection bias.

[14] We are in the process of separating out the light duty trucks from the Sacramento sample.

[15] EPA has claimed that the difference between the Phoenix and El Monte fleets is even more marked because "California has tighter new car standards than the rest of the country..." (EPA, 1995b). However, we see here that EPA is not quite right. Only California's NOx standard is more stringent than the rest of the country. California's CO standard is less stringent, and the HC standard is the same nationwide.

Columns E and F present the difference in emissions between the sample fleets from Sacramento and Phoenix. Column E gives the absolute difference, Column F gives the difference only for emissions above the certification standard. This corrects for the fact that the new cars standards for CO and NOx are different in Phoenix and Sacramento.

If we do not correct for the emission standards (and EPA did not when it presented the data), then Phoenix and Sacramento cars are about the same for CO, the Phoenix cars are cleaner for HC and the Sacramento cars are cleaner for NOx. If the emission standards are taken into account, Sacramento is cleaner for CO, Phoenix is cleaner for HC, and the fleets are the same for NOx.

Table 4

Emissions Comparison: Phoenix and Sacramento fleets

(all numbers are in units of grams per mile)

	Sacramento		Phoenix		Sacramento - Phoenix	
	Emissions	Emissions Above Cert. Std.	Emissions	Emissions Above Cert. Std.	Difference in Total Emissions	Difference in Emissions Above Cert Std.
HC	0.55	0.14	0.41	0.00	0.14	0.14
CO	7.16	0.16	7.11	3.71	0.05	-3.55
NOx	0.97	0.27	1.24	0.24	-0.27	0.03
	A	B	C	D	E	F

EPA is therefore incorrect when it states that Arizona cars are lower emitting than California cars. Furthermore, if the cars in Phoenix were solicited out of the context of their scheduled inspection, their emissions would likely have been higher (see response to question 5, below).

If we were to develop a discount based on EPA's formulation, we would have to discount centralized I/M programs for their effectiveness on NOx, decentralized programs for HC, and there would be no discount for CO. If we include new car standards, we would discount centralized programs for CO, decentralized programs for HC, and there would be no discount for NOx. We do not advocate either of these methods. In fact, as we discuss in the next section, we believe this type of comparison to be irrelevant to the discussion of I/M effectiveness.

EPA's Approach Does Not Really Measure I/M Effectiveness

Even though we found EPA's assertion that Arizona cars are uniformly cleaner than California cars to be incorrect, the larger issue concerns whether such comparisons are relevant to an assessment of I/M effectiveness. A great many factors could account for differences in the emissions of cars in different regions. For example:

- Studies of driving behavior have shown that drivers in Phoenix put their cars under high loads less often and drive at slower speeds than drivers in California.[16] Thus, cars in Phoenix might not be subjected to as many stresses that could cause deterioration as are cars in Sacramento.
- The populace of the two cities may differ in their vehicle maintenance behavior.
- Phoenix has a substantial population of retirees who spend only part of the year there. This could mean that cars in Phoenix are driven fewer miles per year, on average, than cars in California. Lower mileage cars are lower emitting on average than higher mileage cars.
- In the mid and late 1980s, Arizona was under threat of federal sanctions and citizens lawsuits for not attaining federal health standards. As a result, EPA maintained a substantial presence in Arizona when compared to other states.[17] Greater EPA scrutiny could have resulted in Arizona making greater efforts to reduce vehicle pollution than other states.

There may be many other demographic, meteorological or other differences that could affect vehicle emissions. EPA defines all differences to be due to I/M network type. However, a proper scientific analysis requires accounting for more of the factors that could cause differences in the emissions of vehicles. This is a very difficult task.

Another difficulty with the EPA's comparison is that there is no baseline from which to measure I/M effectiveness. EPA's methodology does not, and cannot, tell us if Arizona cars were any higher emitting before I/M than after, and likewise for California.

A better way to assess I/M effectiveness is to perform studies that exclude the many variables that differ from city to city. This can be done by looking at ambient CO levels before and after an I/M program is implemented, or looking at different groups of cars in an I/M program that are at different distances in time from their previous inspection, or, finally, by looking cars in an I/M program, and cars in a nearby region that are not in the I/M program. These three methods all ask the same fundamental question: Are cars that have been through I/M lower emitting than cars that have not? Studies that have asked this question, whether in centralized or decentralized I/M programs, have found that the answer, in general, is no.

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[16] See footnote 10.
[17] See footnote 10.

Response to Question 5

There is evidence that the "clean for a day" phenomenon is a problem in both centralized and decentralized I/M programs. For example:

- In California's decentralized I/M program, BAR's random roadside pullover data show that cars' emissions are far lower during their scheduled Smog Check idle test, than at the roadside pullover idle test (Lawson, 1993). Furthermore, the roadside studies show that the roadside idle test emissions of recently inspected cars are similar to the roadside idle test emissions of cars about to be inspected. Figure 1 summarizes these results.
- In Arizona's centralized I/M program, the Arizona Auditor General found the following in survey of mechanics and motorists (Arizona Auditor General, 1988):
  - "Ninety-three percent of all mechanics indicate they have been asked by customers to simply adjust their vehicle to pass the emission test, rather than conduct the appropriate and needed emissions-related maintenance and repairs.

    "Eighty-eight percent say such requests by customers are either very or somewhat commonplace in the industry."
  - "Ninety-four percent of all mechanics also indicate that they have been asked by customers to re-adjust their vehicles after it has passed the emissions test so that it will run better.

    "Seventy-eight percent say such requests by customers are either very or somewhat commonplace in the industry."
  - Of motorists surveyed, 26 percent who failed their initial test said they had their car readjusted back to its original state after passing a retest.

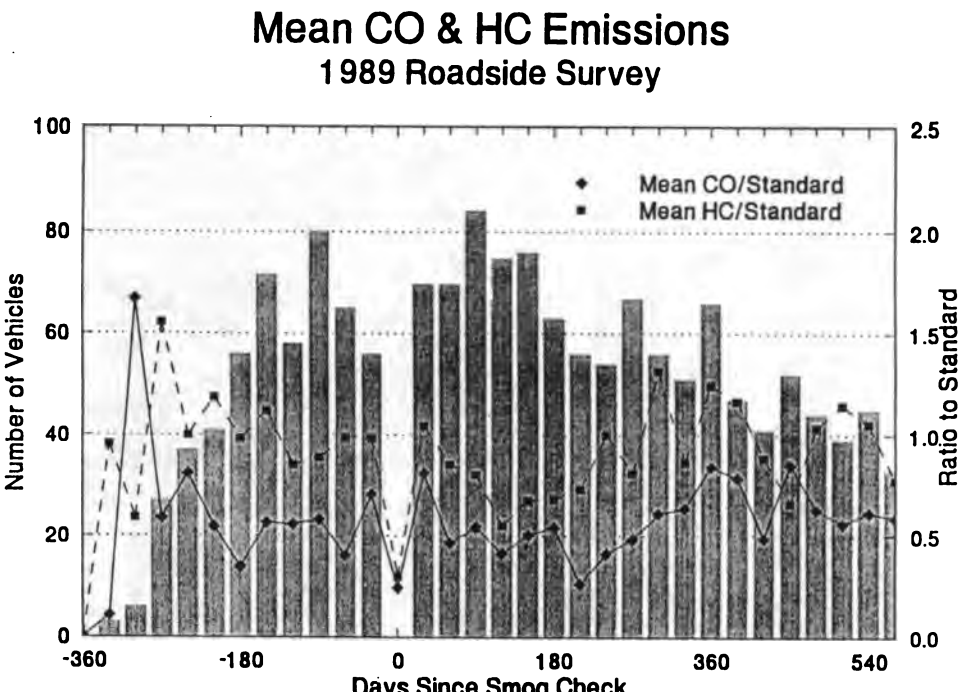
  At the same time, the Arizona Auditor General analyzed ambient CO data and found that the Arizona I/M program was having little or no effect on the on-road CO emissions of vehicles.

  Together, the survey results and the ambient data suggest that Arizona motorists are preparing their cars to pass their scheduled emission test without performing meaningful repairs that would result in lower on-road emissions from their vehicles.
- In Minnesota's centralized I/M program, Scherrer and Kittelson (1994) analyzed ambient CO measurements and found that the I/M program was having little or no effect on the on-road CO emissions of vehicles. Nevertheless, from the first year to the second year of the I/M program, while on-road CO emissions dropped by 12% (a continuation of the pre-I/M trend), idle test CO emissions of vehicles at their scheduled test dropped by 48%.[18] These results indicate that motorists are preparing their cars to pass the scheduled test without performing meaningful repairs that would reduce on-road emissions of their vehicles.

These data clearly show that the "clean for a day" phenomenon is endemic to I/M programs. We suggest that the reason lies not in I/M network type, but in the fact that all I/M programs currently require motorists to have a low-emitting vehicle during a scheduled emission test, but not at any other time. Motorists appear to have made a rational response to this incentive.

[18] Personal communication from Huel Scherrer, March 16, 1995, regarding his analysis of idle test data from the Minnesota I/M program.

Figure 1



CLEAN AIR ACT AMENDMENTS
Inspection and Maintenance Program

FRIDAY, MARCH 24, 1995

HOUSE OF REPRESENTATIVES,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2123, Rayburn House Office Building, Hon. Joe Barton (chairman) presiding.

Present: Representatives Barton, Cox, Greenwood, Burr, Wyden, Waxman, Furse, Eshoo, Klink, and Bliley.

Also present: Representatives Bilbray, Norwood, Gekas, and Longley.

Staff present: Stephen Sayle, majority counsel and Reid Stuntz, minority general counsel.

Mr. BARTON. Today we want to begin a second day of hearings on the inspection and maintenance program of the Clean Air Act of 1990. We have three panels that will appear before us today and our first panel, the distinguished Assistant Administrator for Air and Radiation at the Environmental Protection Agency, Ms. Mary Nichols. She is accompanied by Mr. Richard D. Wilson, the deputy assistant administrator for Air and Radiation and we are delighted to have each of you two individuals with us.

I think, as each of you know, it is the history of this committee to require witnesses to testify under oath. Do either of you have a problem with doing that?

Ms. NICHOLS. No.

Mr. WILSON. No.

Mr. BARTON. It is also the tradition of the committee and according to the rules of the House and the rules of the committee that you can be advised by counsel. Do either of you wish to be so advised?

Ms. NICHOLS. No.

Mr. WILSON. No.

[Witnesses sworn.]

Mr. BARTON. Before we proceed with your testimony I have two housekeeping issues that I would like to address. The first issue, Ms. Nichols, is the fact that the rules of the subcommittee require testimony to be presented 48 hours in advance so that members of the staff and the committee have a chance to be briefed and to be educated on what it is that you are going to testify to.

My staff indicates that your testimony was delivered after 10 p.m. last night and we have known about this hearing for several weeks. I doubt that you changed your mind about what you were going to say yesterday.

Is there any reason that the EPA cannot abide by the rules that every other witness has abided by?

Ms. NICHOLS. I am sorry, Mr. Chairman. I am not aware of the reason for the late delivery of the testimony. I know there is a process involved in getting testimony reviewed, cleared, et cetera and I really don't know the reason why it was late but I would be happy to look into it and it certainly was not our intent to be late.

Mr. BARTON. I am not going to make a major issue of it this time but this is the third time and Mrs. Browner, when she testified, her testimony came in the night before, when you testified earlier last week, your testimony came in the night before. Last night, it came in the night before.

In baseball, three strikes and your out. So I have checked with the minority and they are in agreement that it is only fair to the members of the committee that your testimony be available reasonably in advance so that we can study it.

Ms. NICHOLS. I understand and we will do our best to correct the problem.

Mr. BARTON. The second thing I would like to bring to your attention, and this may not necessarily be to your personal attention but you are the senior EPA person before us.

Back on March 1, I sent a letter to Mrs. Browner requesting some information with regard to the Building Air Quality Alliance Initiative and asked that certain information be provided to the subcommittee by March 15. Today is March 24 and we have not yet received a response.

If I give you a copy of this letter for your staff, will you forward it to Mrs. Browner and ask for her to reply early next week?

Ms. NICHOLS. Yes. Mr. Barton, it was my impression that that letter had been sent but if you will give me an opportunity before the end of this hearing, we will verify that.

Mr. BARTON. Okay, well, I haven't personally received it and the staff person responsible for receiving it told me this morning that we had not received it.

Ms. NICHOLS. We will check into that.

Mr. BARTON. Okay, thank you.

We would now like to hear your oral statement and, if possible, if you could do it in 5 minutes.

TESTIMONY OF MARY D. NICHOLS, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY RICHARD D. WILSON, DEPUTY ASSISTANT ADMINISTRATOR

Ms. NICHOLS. Thank you, Mr. Chairman. Good morning, and other members of the committee. It is a pleasure to be back with you again today.

Air pollution continues to be a major public health problem in nearly every major city across the United States. Many citizens who live and work in our urban areas are exposed to unhealthy levels of carbon monoxide and ozone smog pollution.

The Clean Air Act Amendments of 1990 established a carefully balanced and comprehensive approach to reducing this health threat. The law requires every sector of the country to contribute its fair share in lowering emissions of harmful pollutants. Fac-

tories, power plants, large and small businesses, auto makers, fuel providers and individual car owners have also been asked to do their part.

The vehicle inspection and maintenance program is a critical element in our effort to improve air quality and to protect human health. We have long said that our goal is to implement the inspection and maintenance program, and I will call it I/M just to make it shorter, in ways that make both economic and environmental sense. The three most common sense cost effective ways to control air pollution for motor vehicles are cleaner cars, cleaner fuels and better maintenance.

We have been working in partnership with the auto manufacturers to improve new car technology and tremendous progress has been made. Cars today emit 90 percent less pollution today when they come off the assembly lines than they did 20 years ago. The simple fact is, however, that cars deteriorate as they age, even the highly sophisticated, computer-controlled and fuel injected cars that are being produced today. It is not unusual for cars on the road to pollute between 2 and 17 times as much as the new car standards to which they were designed and built. About 20 to 40 percent of the vehicles on the road today need repairs to bring down their emissions levels. An inspection program is the cleanest, cheapest and smartest way to identify these cars and to ensure that they are repaired effectively.

After Congress required States to begin inspection and maintenance programs through the 1977 amendments to the Clean Air Act, some States chose to implement programs with stations that only perform tests, so-called test only stations, while other States adopted programs that allow auto repair shops to perform the I/M tests. At the time, EPA policy gave equal emission reduction credit to both test-only networks and test-and-repair networks. Over the past 15 years, EPA and States have collected and analyzed a vast array of data on I/M effectiveness and how it relates to program design. We found that test-and-repair programs are much less effective in curbing emissions levels for protection of public health.

The Clean Air Act Amendments of 1990 specified that serious, severe and extreme nonattainment areas and all large cities in the Northeast Ozone Transport Region improve or enhance their existing I/M programs. About 80 cities in 23 States are required to implement enhanced programs and there is a map up there that just gives you an indication of where they are.

Additionally about 90 moderate and marginal ozone areas are required to continue their existing basic I/M programs. After the 1990 amendments were signed into law by President Bush, EPA initiated an extensive public participation and outreach process to develop a consensus on how to proceed with enhanced I/M regulations. EPA worked closely with States, industry and other groups before and during the rulemaking process. Public meetings were held throughout the country before the regulations were proposed.

Almost all sectors, industry, States and environmental groups strongly supported a high performance standard for enhanced I/M, one that would involve both advanced testing procedures and separation of testing from repair to make the programs more effective.

The regulations that EPA issued in November 1992 established a model I/M program that can reduce motor vehicle VOC and carbon monoxide emissions by about one-third. In addition, it can reduce oxides of nitrogen emissions by about 15 percent.

EPA also worked hard to improve the cost effectiveness of the I/M program. By doing a better test but doing it less often, biennially instead of every year, substantial cost savings are achieved in the inspection process while emissions reductions are improved and public health is protected. As a result, enhanced I/M reduces VOC emissions at a cost of about $500 per ton. This compares very favorably with other measures, such as stationary source controls, which cost anywhere from $2,000 to $10,000 per ton of VOC's removed.

The most controversial I/M element of the 1990 Clean Air Act is without a doubt the statutory requirement that enhanced I/M programs be centralized; that is, test only. Unless a State can demonstrate that a decentralized or test-and-repair program is equally effective. The basis for this requirement is well supported by the experience of the 1980's.

In the 1980's, test-and-repair I/M programs suffered from improper testing problems and despite many attempts, States were unsuccessful in correcting these problems. The most aggressive efforts were probably made in my home State of California. The State developed a huge enforcement bureaucracy and spent large amounts of money to oversee and enforce the test-and-repair system over the last decade. Aggressive enforcement in California ranges from monetary fines to suspension of testing and even to jail time for fraudulent smog certificates.

EPA relied heavily on the results in California and other States in developing the so-called 50 percent discount for test and repair I/M programs. EPA also conducted audits of I/M programs as have the General Accounting Office and EPA's Office of Inspector General. Without exception, these audits have shown that test-and-repair programs suffer from severe operating problems.

EPA's covert audits showed improper testing about 80 percent of the time and State audits involving over 10,000 separate undercover car runs found similar results. If these programs aren't effective, we are not only wasting the public's time and money, we are not meeting our goal of protecting the public health.

Given these consistent findings, EPA worked hard to craft the November 1982 regulations. These regulations recognized goals of curbing emissions to protect public health and the limitations of the existing test and repair programs. But, at the same time, the regulations provided flexibility to States to design programs that meet their own needs. Our interest was achieving the air quality goals in a common sense and cost effective manner. We do not have a vested interest in how that is accomplished but we are concerned the continuing ineffective programs will mean wasted resources and public dissatisfaction in addition to failing in our mission of cleaning up the air.

The Clean Air Act and EPA also recognize that enhanced I/M programs include on-road testing. Although States have flexibility in the type of on-road testing they conduct, many are considering roadside remote sensors. Over the past 5 years, EPA has partici-

pated in 23 studies on remote sensing devices for motor vehicle tailpipe emissions. Recently, EPA has worked with the State of California to design and carry out a comprehensive study of remote sensing in Sacramento. We intend to use the results of the California study to establish emission reduction credits for remote sensing programs based on the scientific and technical data.

As the States have been designing their programs, they have asked EPA to provide them with additional flexibility. EPA Administrator Carol Browner announced a few months ago that EPA would create a new so-called low enhanced performance standard that will be substantially less stringent than the current high-enhanced performance standard. Under this common sense approach, States will not have to implement test only programs if they do not need the high level of emissions reductions that such programs provide. They will have the option to implement test and repair networks as long as they can find enough emissions reductions elsewhere to achieve the 15 percent reduction in VOC emissions by 1996 as well as the ozone attainment requirements.

In addition, EPA's new policy allows for hybrid systems that combine test only and test-and-repair components. A hybrid approach offers greater public convenience possibilities and supports businesses currently involved in the I/M testing and repair of vehicles. Several States are pursuing this approach including the State of New Jersey.

I want to make it clear that EPA firmly believes, based on the data available today, that a test-and-repair program cannot be as efficient or as cost effective as a test-only program. The credits that we allow for various I/M program elements will continue to provide maximum credit to the high-tech test-only systems. Maintaining our investment in motor vehicle pollution control equipment instead of trying to get diminishing returns from factories and small businesses is the most cost effective approach to protecting public health and our environment. In fact, implementing effective I/M programs instead of alternative controls will save the U.S. economy over $1 billion annually. Implementing a good program will also create between 4,000 and 11,000 new jobs in the automotive repair industry.

For the majority of motorists who keep their cars reasonably well maintained, which we estimate is about 70 percent of the vehicle population, the 15 minute test every other year will be the full extent of their involvement with I/M. Their cars will pass and they will be on their way. Even for the motorists whose cars fail, there are indirect benefits. The most common engine problems cause a car's fuel consumption increase. By fixing the problem, the motorist will actually end up saving some money at the gas pump. Over time, these savings will largely offset the repair costs needed to pass the I/M test.

In closing, we have found that the vast majority of Americans understand and accept their responsibility to maintain their cars in a reasonable manner and not to remove or disable the emissions control devices. Most motorists agree that spending $20 and 15 minutes, which is about what it takes for an oil change, is a small price to pay for cleaner air and better health, providing that that test is accurate, fair and convenient.

Thank you very much. I would be happy to answer any questions that you may have.

[The prepared statement of Mary D. Nichols follows:]

STATEMENT OF MARY D. NICHOLS, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman and members of the Subcommittee. Good morning. I appreciate the opportunity to appear before you today to address a most important air pollution control program—the motor vehicle emissions inspection and maintenance program.

Air pollution continues to be a major public health problem in nearly every major city across the United States. Many citizens who live and work in our urban areas are exposed to unhealthy levels of smog and carbon monoxide pollution. The Clean Air Act Amendments of 1990 established a carefully balanced and comprehensive approach to reducing this health threat.

Factories, power plants, large and small businesses, automakers, fuel providers, and individual car owners have all been asked to do their part. The vehicle inspection and maintenance (I/M) program is a critical element in our effort to improve air quality.

Motor vehicles typically contribute as much as one-half of the ozone-forming emissions and up to 90 percent of the carbon monoxide emissions in urban areas. We have made tremendous progress in reducing vehicle emissions but more people are driving more vehicles more miles every year. Vehicle miles traveled have doubled over the past 20 years. We need to keep finding ways to lower emissions just to keep up with this trend.

There are three critical elements to controlling motor vehicle pollution: cleaner cars, cleaner fuels, and better maintenance. We have been working with the auto manufacturers to improve new car technology and tremendous advances have been made. New cars emit 90 percent less pollution today than they did 20 years ago. The simple fact is, however, that cars deteriorate as they age, even the highly sophisticated computer controlled and fuel injected cars that are being produced today. It is not unusual for cars on the road today to emit from 2 to 17 times as much as the new car standards to which they were designed and built. About 20–40 percent of the vehicles on the road today need repairs to bring down emission levels. the best way we know of to identify these gross polluters and ensure effective repairs is a periodic inspection program—enhanced I/M.

In the past 15 years, EPA has been working with states to provide as much flexibility as possible in the design and implementation of I/M programs while maintaining the goal of effective and efficient programs that achieve high levels of public acceptance. EPA did not start out with a bias toward one type of I/M program or another. After the 1977 Amendments to the Clean Air Act, EPA policy gave equal emission reduction credit to programs that had stations that only perform I/M tests (test-only) and programs that allow auto repair shops to perform I/M tests (test-and-repair).

Some states chose to implement test-only networks and some chose to implement test-and-repair networks. Since 1977, EPA has collected and analyzed a vast array of data on I/M effectiveness. Some of these data were generated by state agencies or special study commissions set up by legislatures, while other studies have been conducted by EPA. EPA carefully reviewed all of this information and the inescapable conclusion was that test-and-repair programs are much less effective than test-only programs.

The Clean Air Act Amendments of 1990 specified that serious, severe, and extreme ozone nonattainment areas and all large cities in the northeast ozone transport region implement enhanced I/M programs. About 80 cities in 23 states are required to implement enhanced programs. Moderate and marginal ozone areas are required under the 1990 Amendments to continue existing basic I/M programs. Some of these cities have since reached attainment of the air quality standards and now about 90 cities are required to have basic programs.

After President Bush signed the Clean Air Act Amendments of 1990, EPA initiated an extensive public participation and outreach process to develop a consensus on how to proceed with enhanced I/M regulations. EPA worked closely with the states, industry, and other groups both before and during the rulemaking process. Public meetings were held throughout the country before the regulations were proposed. Almost all sectors—industry, states, and environmental groups—strongly supported a high performance standard for enhanced I/M, one that would involve both advanced testing procedures and separation of testing from repair to make the programs effective. The regulations that EPA issued in November 1992 established

a model I/M program that can reduce motor vehicle VOC and CO emissions by about one-third. In addition, it can reduce oxides of nitrogen emissions by about 15 percent. EPA also worked hard to improve the cost-effectiveness of I/M. By doing a better test but doing it less often, substantial cost savings are achieved in the inspection process while emission reductions are improved. As a result, enhanced I/M reduces VOC emissions at a cost of about $500 per ton. This compares very favorably with other measures, such as stationary source controls which cost up to $10,000 per ton of VOC's reduced.

Maintaining our investment in motor vehicle pollution control equipment instead of trying to get diminishing returns from factories and small businesses is a common sense approach. In fact, implementing effective I/M programs instead of alternative controls will save the U.S. economy over $1 billion annually. Implementing a good test-only program will also create between 4,000 and 11,000 new jobs in the automotive repair industry.

I have found that the vast majority of Americans understand and accept their responsibility to maintain their cars in a reasonable manner and not to remove or disable emission controls. The vast majority of motorists agree that spending about $20 and 15 minutes—about what it takes for an oil change—is a small price to pay for cleaner air, providing the test is accurate, fair, and convenient. New emission testing procedures mean that cars need only be checked once every 2 years and that test results are far more accurate than ever before.

Let me describe the elements that make up the enhanced I/M program. The IM240 test procedure is a central feature of the test but it is not really new. The IM240 was derived from the Federal Test Procedure (FTP), which has been used by the auto industry and EPA to certify new vehicles for more than 20 years. Like the FTP, the IM240 tests a vehicle on a treadmill or dynamometer. The car is driven onto the dynamometer and operated over a set driving cycle for several minutes that simulate real-world city driving. This fully-automated test was specifically developed to overcome the many problems of the basic I/M test that only measures a car's emissions at idle. The IM240 has been successfully demonstrated in a pilot program involving over 10,000 vehicles in real-world I/M testing and has been practically and economically implemented in I/M programs in Colorado and Arizona.

IM240 is only part of the test process. EPA has found that evaporative emission control systems on cars in use were failing with surprising frequency and that very large quantities of excess gasoline vapors were occurring as a result. This raw gasoline is a significant contributor to the ozone problem. So, two new functional checks of the evaporative emission controls were developed to identify malfunctioning systems.

The most controversial I/M element of the Clean Air Act Amendments of 1990 is, without a doubt, the requirement that enhanced I/M programs be "centralized" (that is, test-only) unless a state can demonstrate that a "decentralized" (test-and-repair) program is equally effective. The basis for this requirement is well supported by the experience of the 1980's. Test-and-repair I/M programs suffered from severe operating problems and repeated attempts by states to correct these problems were not successful. The most aggressive efforts were probably made in my home state of California. The State developed a huge enforcement bureaucracy and spent large amounts of money to oversee and enforce the test-and-repair system over the last decade. Aggressive enforcement in California ranges from monetary fines, to suspension of testing, to jail time.

EPA relied heavily on the results in California in developing the so-called 50 percent discount for test-and-repair I/M programs. EPA and other states have also conducted audits of I/M programs, as have the General Accounting Office and EPA's Office of Inspector General. Without exception, these audits have shown that test-and-repair programs suffer from severe operating problems. EPA's covert audits showed improper testing about 81 percent of the time and state audits involving over 10,000 separate under-cover car runs found similar results.

There has been no lack of trying to make test-and-repair I/M programs work. For example, the State of New York required stations to buy cutting edge technology equipment—fully automated and connected by modem to the Department of Motor Vehicles for rapid data capture and oversight. The testimony provided by New York officials during EPA's public hearing on I/M laid out in stark terms the overwhelming obstacles that exist in the test-and-repair system.

The fundamental problem is a conflict of interest in which inspectors have strong incentives to pass cars that should fail and in need of repairs. EPA asked states to come forward with ways to make a test-and-repair system effective so that we could build it into our I/M regulations. EPA even proposed a trial period in which states could further attempt to make test-and-repair systems work. The response we got was a resounding, No. States did not know of any way to make the test-and-

repair system effective and they argued that we should not allow a trial period because it would not lead to success and would instead simply delay getting needed air quality improvements. California EPA, for example, wrote to U.S. EPA and said, "We urge EPA to delete the one-more-try-at-test-and-repair program option from the final rule." The South Coast Air Quality Management District (Los Angeles) wrote, "We believe that EPA should require centralized test-only facilities."

Given these consistent comments from state officials, EPA worked hard to craft a policy that recognizes the law's intent and the limitations of test-and-repair programs.

There are advocates of alternatives that will tell you otherwise: either that there is a magic bullet that can make test-and-repair more effective or that test-only I/M is just as bad as test-and-repair. We disagree with both assertions. Our interest is achieving the air quality goals in a practical and cost-effective manner. We do not have a vested interest in how that is accomplished, but we are concerned that continuing ineffective programs will not only mean wasted resources and public dissatisfaction, but it will also mean we do not accomplish the goal of protecting public health.

In an effort to provide additional flexibility to states, EPA is in the process of modifying its I/M regulations to create a new, "low enhanced" performance standard that will be substantially less stringent than the current "high enhanced" performance standard. Under this new approach, states will not have to implement test-only programs if they do not need the high level of emission reductions that such programs provide. They will have the option to implement test-and-repair systems, as long as they can find enough emission reductions elsewhere to achieve the 15 percent reduction in VOC emissions by 1996 and, eventually, attainment of the ozone or carbon monoxide standards as required by the Clean Air Act.

In February 1995, EPA issued new I/M emission credits for auto technician training and certification, and an alternative to the IM240 test procedure. These credits will help states provide incentives to the repair industry to upgrade its skills, training, and equipment to meet the challenges presented by the ever-changing new technologies on modern cars. Our new policy also allows hybrid programs which combine test-only and test-and-repair components. The hybrid approach offers greater public convenience possibilities and supports businesses currently involved in I/M testing and repair of vehicles. Several states are pursuing this approach, including the State of New Jersey. The Clean Air Act and EPA regulations require that enhanced I/M programs include a certain amount of "on-road testing." Although states have flexibility in the type of on-road testing they conduct, many are planning to install roadside remote sensors.

Over the past five years, EPA has participated in almost 23 studies on remote sensing devices (RSD) for motor vehicles. This participation included whole or partial funding of these studies as well as providing technical input. Most of these studies also had other participation which, in some cases, included the motor vehicle and petroleum companies, state and local agencies, as well as (for seven of the studies) Dr. Donald Stedman of the University of Denver who was instrumental in developing RSD. In some of these studies, the other participants had a far larger role than EPA.

The information that is necessary to determine the usefulness of RSD as a screen for high emitting vehicles is whether it can identify high emitters on the IM240 test cycle which correlates well with the full Federal Test Procedure. To establish the correlation between RSD and the IM240 driving cycle, one needs a study in which both RSD and IM240 measurements are taken on a large number of vehicles. The early studies conducted by EPA's Office of Mobile Sources did include both types of tests. The result of those studies show that remote sensing can be used as a supplement to I/M programs, but not as a replacement. The studies, which have been peer reviewed and published by EPA technical staff in engineering journals, show that remote sensing misses many of the gross polluters while failing many clean cars. More recently, EPA has worked with the State of California to design and carry out a comprehensive study of remote sensing in Sacramento. This study will shed new light on the effectiveness of remote sensing and will allow EPA, for the first time, to establish emission reduction credits for remote sensing programs. This was the first comprehensive attempt to use remote sensing to measure on-road emissions from the entire registered population of vehicles in a city and to compare those measurements with mass emission tests of a sample of the same vehicles. The study phase of this program is complete and we are waiting for California to finish its analysis of the data and to provide us with its conclusions. Once we get the results from California, we will issue the appropriate I/M credits based on the scientific and technical data. It is important to note that RSD measures tailpipe emissions and

cannot measure evaporative emissions, which are often 50 percent of total vehicle VOC emissions.

EPA is also pursuing changes to its rules to provide states with greater flexibility in the timing of the so-called $450 repair waiver. EPA believes that sufficient authority exists in the Act to allow states to phase this requirement in over the next few years. Of course, most vehicles can be repaired for less than $450. Recent repair studies and actual experience with the IM240 program in Arizona show that average repair costs are in the $150–$300 range. EPA's proposal to allow states to phase-in the minimum expenditure and other provisions for economic hardship cases will ease any negative impacts and boost public acceptance.

To conclude, enhanced I/M is a critical component of this Nation's efforts to improve air quality. A good enhanced I/M program is cost-effective and practical. By its very nature, however, it affects car owners directly, and therefore is a visible target for critics of any new government program. The fact remains, however, that if we as a society value clean air we need to assure that the emission controls on the millions of cars and trucks used in urban areas are working. A periodic emissions check is the best way we know to accomplish this goal. Keep in mind that the I/M test only needs to be performed once every two years and some states exempt from testing cars that are less than four years old.

For the majority of motorists who keep their cars reasonably well-maintained, about 70 percent of the population, the 10 minute biennial test will be the full extent of their involvement with I/M. Their cars will pass and they will be on their way. Even for the motorists whose cars fail, there are indirect benefits. The most common engine problems cause a car's fuel consumption to increase. By fixing the problem the motorist will actually end up saving some money at the gas pump. These savings will largely offset the repair costs needed to pass the I/M test.

I hope I have clarified for this subcommittee EPA's views on vehicle I/M programs. We have listened to the many comments we have received over the past months and are responding with common sense revisions to our regulations. For these reasons, I believe the Clean Air Act does not need to be amended in order to provide states with the flexibility to implement effective I/M programs tailored to local needs and conditions.

Thank you very much. I would be pleased to answer any questions you may have.

Ms. NICHOLS. Mr. Chairman, I have just received the information that the letter you refer to was signed and was sent to the committee on March 15 so we are bringing another copy of it up this morning.

Mr. BARTON. We appreciate it. It must have been sent to the wrong address.

Ms. NICHOLS. Perhaps. Maybe your mail system is as bad as ours. I hope not.

Mr. BARTON. Thank you, ma'am. That is good work, though, if you can solve every problem in 10 minutes or less we are going to give you more to do.

The Chair would now recognize himself for the first 5-minute questioning period.

Yesterday in our first day of hearings on this, we had a gentleman, two gentlemen actually from the University of Minnesota that had done a study of their centralized testing program over I think a 7½ year period and it showed that the level of carbon monoxide had, at best, declined by 1 percent because of that testing program. Their conclusion was that, based on real world evaluation, the inspection and maintenance program at least in the State of Minnesota wasn't delivering the air pollution reductions that the EPA model claimed that it would.

Have you studied this study in Minnesota and, if so, what would your comments be on its conclusions?

Ms. NICHOLS. Mr. Chairman, I recently became aware of the Minnesota study that you are referring to and I have looked at it and talked to some other people about it. I believe that the study

is not an adequate study to demonstrate a connection or a lack of connection between the testing program and the ambient air quality. It is simply too difficult to do the kind of real world test that they were talking about in a city like Minneapolis or in the Minnesota area where you have got other controls on the automobiles, other factors affecting the readings that you are getting to demonstrate what the precise effectiveness of any one particular program in that area would be. We feel that it is more accurate to rely on emissions tests and to evaluate the real world impact of the testing program on the actual emissions of the vehicles.

However, I would also note that we do have several other studies that we would be happy to furnish to the committee that have linked both the emissions and the ambient air quality and that do support the connection between the emissions reductions and the air quality benefits.

Mr. BARTON. One of the things that this subcommittee is going to insist upon, because we are very seriously looking at reopening the Clean Air Act and if we do that, we are going to attempt to make changes that base the programs on real world data.

If the purpose of inspection and maintenance programs is to reduce air pollution as a result of mobile sources, those programs should have validation that they work.

Ms. NICHOLS. We absolutely agree with you, Mr. Chairman.

Mr. BARTON. And the model—we've had numerous witnesses testify that the EPA's MOBILE 5-A predicts these reductions, but when you go out and try to evaluate and validate, the data is not there to validate it.

Ms. NICHOLS. Modeling is a continuously evolving science, and models have to be altered based on real-world data, which is what we attempt to do.

I would, however, would point out that the real world data about carbon monoxide, which is what the Minnesota study is based on, shows that carbon monoxide is practically not a problem as an air quality issue anymore in most of the areas that were originally classified as non-attainment under the Clean Air Act.

Mr. BARTON. The main point that I want to get across to you in your capacity, your official capacity, is we are really going to insist that we base these programs on verifiable information and not on some academic theory that may have been valid 10 or 15 years, but has yet to be proven in the real world.

I mean, we are asking American industry and American citizens to spend billions of dollars and quite a bit of time waiting in line if we go with this continued centralized testing program, the bottom line, is do we get the result that we are supposed to get.

Ms. NICHOLS. Right. We agree. That is why we are so pleased that the results are allowing us to move almost half of the areas that were non-attainment at the time of the 1990 amendments into attainment status.

Mr. BARTON. On that same line we are going to do more than one round of questions, so I am now going to recognize the gentleman from Oregon for 5 minutes.

Mr. WYDEN. Thank you very much, Mr. Chairman. Ms. Nichols, you talk about hybrid systems that combine test only and test/repair components. We would like to know a little bit more about

what they would consist of. For example, whether you would have test and repair for younger cars and test only for older cars. Tell us a bit, if you would, about this concept of hybrid systems.

Ms. NICHOLS. Well, as you've indicated, Mr. Wyden, a hybrid system is a combination of test only and test and repair, and it can vary in the number of different ways, but I might just give as an example the program in New Jersey which EPA has approved for full credit as a high enhanced program.

In New Jersey, cars that are 6 years old or newer will be permitted to go to independent test and repair stations for their testing, and older cars will go to the test-only stations that are operated through an existing network that the State there happens to already have.

And then if a car fails on more than one test, it will also have to go to the separate test-only stations.

Mr. WYDEN. What was the reaction of the Governor of New Jersey to this approach?

Ms. NICHOLS. This is the program that the Governor of New Jersey developed and has recommended, and we were very pleased to be able to support it.

Mr. WYDEN. Now, the key question, of course, is whether EPA is going to give full credit to these hybrid systems because, of course, that is what is available under the IM240 system.

What is the EPA's position with respect to credits?

Ms. NICHOLS. We were able to give full credit to the New Jersey program based on several features of that program. We looked at a test which is different from the EPA's originally proposed I/M240 test, which we were able to find equivalent; the ASM test; and we also found that by doing additional mechanic training and certification, New Jersey would be able to increase the effectiveness of the repairs and thereby make up any additional credits, so that their hybrid program will get an equal number of credits of the original EPA approach.

Mr. WYDEN. Are you all having discussions with other States about these hybrid systems, and if so, which other States?

Ms. NICHOLS. Several other States have discussed hybrid options with us.

We don't have any plans that are currently under review at the moment, but a number of other States including California are looking at hybrid programs.

Mr. WYDEN. The reasons I asked these questions and I appreciate your answers, is a lot of us feel that it is really a false choice to have this debate between just a centralized approach and a decentralized approach.

And I am pleased that you all are talking about giving full credits for this kind of approach, and hope you will keep us advised.

Now, Ms. Nichols, you also state in your testimony that the results of initial studies of remote sensing conducted indicate that remote sensing can be used as a supplement to inspections and maintenance programs, but not a replacement.

Could you explain why the department has taken that view?

Ms. NICHOLS. Yes. We, as I indicated earlier, ourselves have done a number of studies. I think I added them up last night and it did come out to 23, as well as looking at other data on remote sensing,

and we have invested money in trying to improve the technology, but there are a couple of reasons why it cannot be a full replacement.

One, of course, is as I indicated, I think, on an earlier chart, we actually are looking for three different types of pollutants in today's inspection and maintenance programs: carbon monoxide, VOC's or volatile organic compounds, and NO_x.

In the new enhanced programs, it is the ability to detects the NO_x, which has been the part of the ozone smog problem that we really had neglected in the past that is critical.

The remote sensing technology at this point is doing quite well for carbon monoxide, and is doing much better for the VOC's, but it is not yet capable of detecting cars that are failing in NO_x, and unfortunately, it is different cars that fail on these different pollutants.

We also have a problem in terms of the numbers of false failures and the number of failures that you have to detect which then require the car to go into a diagnostic-type I/M program, so that at this point I think no one is advocating, that I have heard, that remote sensing could be a complete substitute for a periodic test.

But that doesn't mean that it shouldn't be used more widely than it is now, and not only for an audit type of function, but even perhaps more importantly to try to get a better handle on cars that may be getting tested and then failing again before time would come up for their next periodic inspection.

Mr. WYDEN. My time is expired, but I just want to make an observation. My good friend has said that he is looking at reopening the act, and I have expressed concern because I think that would really feed extremists on both sides, on the left and on the right.

But with respect to the remote sensing issue, in particular, and California is delayed in terms of getting this data, I'm not sure there would be a debate between extremists on the issue that my friend cares about.

I think if we reopen the act and have a debate on remote sensing, I think the discussion will be between those who say we really don't know enough, that it is preliminary, and the debate will be between those who say the thing just doesn't work.

I think that would be unfortunate because I, as a member, want to know more about remote sensing and work with my friend from Texas.

I would hate to see us get into these kinds of discussions that come about through reopening the act.

I thank the gentleman.

Mr. BARTON. I thank the gentleman. We will have numerous opportunities to work together and debate together, I can assure you.

I now recognize the distinguished chairman of the full committee, Mr. Bliley.

Chairman BLILEY. Thank you, Mr. Chairman.

Ms. Nichols, in yesterday's testimony, Joel Schwartz from the California I/M review committee stated that when asked what EPA based its credit system on, EPA responded that it was based on audit and tampering data.

When the I/M review committee released their report questioning the validity of the credits based on this information, EPA changed

its story saying audit and tampering data plays a minor role in developing credits.

Please tell this subcommittee exactly what data EPA has relied on to determine this credit: audit, tampering or something else?

Ms. NICHOLS. Yes, Mr. Bliley. We do have both kinds of data that we use, but in terms of developing the credits for the February memo that has been released to all the States that were designing their programs, those credits were based primarily on emissions testing data that EPA and others have collected.

It is not on audit or tampering data. It is emissions tests.

Chairman BLILEY. Information we have indicates that some of these studies weren't done until January 1995. Do you know when these studies were done?

Ms. NICHOLS. There have been a number of studies done over a period of many years, Mr. Bliley.

There were some additional studies done in January which have added to the base of knowledge with respect to the Arizona program which wasn't up and running until just at the beginning of this year, but we have many years of data, and it is all part of the record, and we use it all.

Chairman BLILEY. Was the Arizona study used as part of the basis?

Ms. NICHOLS. No.

Chairman BLILEY. The Clean Air Act allows States to adopt a decentralized testing program if it can show to the satisfaction of the Administrator that it is as effective as the centralized.

How can States prove that decentralized is just as effective when EPA's model automatically deducts 40 to 50 percent from decentralized programs?

Ms. NICHOLS. There was a period of time after the 1990 amendments were passed which contained that provision in which States had opportunities to do a number of things, to beef up or improve their programs, and States were busily collecting that kind of data.

In addition, there are two other ways that States can operate. There are pilot programs that States can run such as what California has been doing to attempt to demonstrate that their existing program can be made to be fully equivalent.

And there is also the new low enhanced program which EPA is authorizing for States that don't need more credits, which will allow those States to continue to use a decentralized test and repair program only.

Chairman BLILEY. Yesterday, Dr. Stedman, citing remote sensing data, and Dr. Kittelson and Mr. Scherrer, citing their ambient study, stated that they could not detect that I/M was having any effect on cleaning vehicles. Dr. Lawson has stated in testimony that using roadside pullover and tampering data he can observe no measurable effects of I/M.

How do you respond to these gentleman?

Ms. NICHOLS. There are a couple of things to say. First of all, we have ambient air quality data that indicates that in areas that have good testing programs, air is getting better.

Establishing the precise cause and effect relationship of the testing and repair versus other programs on ambient air quality is confounded by a lot of other factors.

I know you are familiar with some of the problems with epidemiology and human health studies, and you have a somewhat similar situation with respect to detecting the overall ambient air quality benefits of any one particular program.

However, what we do have, and what I believe is reliable, is emissions data on cars that have been identified, repaired, tested, and checked again, as in terms of what those particular individual cars are actually emitting before and after they've been identified on a test, and those are the data that we feel we can solidly rely on.

Chairman BLILEY. EPA uses a model of real-world pollution to predict pollution reductions from programs such as I/M. In the last 2 days we have had testimony about real-world pollution measurements that do not agree with model projections.

Should we believe the model or the real-world measurements of pollution?

Ms. NICHOLS. We should always attempt to improve models based on the real world. Ever since the original 1970 Clean Air Act was first passed by the Congress, people have been attempting to build models in order to do a better job of predicting the effect of control measures, and we would obviously want to see all real-world data fed back into the model.

The current MOBILE source model, the MOBILE 5-A model, is based on thousands of real-world data points that have been fed back into the model, but what we have learned over the years, that a combination of the different ways in which people drive and the differences in cars themselves, cause those models not to be perfect, and so we keep trying to improve them.

Chairman BLILEY. Since you agree that the model needs to be adjusted, would you agree that the model needs to be reviewed by a peer group to determine its accuracy?

Ms. NICHOLS. The model has been reviewed. It could be reviewed perhaps further, but we certainly have no problem with submitting to additional review of the model.

Mr. BARTON. The chairman's time has expired. I think that is an excellent question.

I have to ask the next gentlelady for 5 minutes.

Ms. ESHOO. Thank you, Mr. Chairman. Welcome to our distinguished panelists.

No program will work unless it is accepted by the public. On the one hand, when we look at the polling of the American people and what their values are, they are absolutely insistent and consistent with that insistency that they want to breath clean air. That is for all of our constituents, no matter what district we represent.

Can you tell us if you believe that the public will continue to submit themselves to the multiplicity of visits that it takes to the repair shop to bring about the wandering exhaust into compliance. I think this is really where the rubber meets the road.

I think where some of the problems lie is the Agency's flexibility under the law to allow experimentation with different kinds of programs that bring about and sustain that value that the American people are so insistent upon.

Maybe you can address yourself to that.

Ms. NICHOLS. Yes, I agree with you, Ms. Eshoo. We certainly have seen that every time a State passes legislation or if they get it passed then they actually try to implement it, that questions come up about consumer acceptance, public convenience and so forth.

These are not issues that can be left solely to engineers. They have to reflect real world political and policy judgments as well.

The State of New Jersey program which I was talking about earlier was particularly concerned about the so-called "ping-ponging effect" where a car could fail a test, be sent to be repaired, come back again, still fail, go back and forth and back and forth.

Ms. ESHOO. But isn't that more a function of the reliability of the test? I mean, the consumer is not involved in that part of it.

Ms. NICHOLS. The issue, I think, for the consumer, if they've done their part, taken their car to be tested, gone and paid the money to get it repaired and then failed again, it is a terrible situation both from the point of view of the time they've spent and their confidence in the whole program.

Ms. ESHOO. And their money because they paid for it.

Ms. NICHOLS. Yes, as well as their money, absolutely. So the State there came up with a program in which people could go and get their car both fixed and retested in a private repair facility, and not have to bring it back to the testing station as a way of relieving some of the burden, making the program more convenient to the motorists and sparing them their time, which is also valuable.

And that was an approach that they felt would work better for the people of New Jersey and we certainly supported that decision.

California at one point was contemplating a similar approach with a so-called "Gold Shield program" where private stations which had specially certified and trained mechanics could qualify for a test and repair system.

Ms. ESHOO. We moved from that because they were rip-offs—or it was promised you could drive in any place.

Ms. NICHOLS. Right.

Ms. ESHOO. I mean, close your eyes, what do you see? It happened to some people.

Ms. NICHOLS. But the important factor in both of those is to improve the quality of the mechanics.

Ms. ESHOO. Right. So within the EPA, in implementing the inspection and maintenance program, what I am hearing you say is in order to get to what that American value is, and it is terrific what people want and insist on, you are saying there is flexibility in 50 States on inspection and maintenance, and you are giving credit back for it?

Ms. NICHOLS. Yes, Ms. Eshoo. We believe there is substantial flexibility. The flexibility to design what type of testing system you are going to use, whether it will be operated by a contractor, by a State or by individual privately-run garages.

There is room for some testing and repair to be done at the same location under the same ownership in a hybrid system, and there is also room to build more effective programs through greater use of remote sensing, better mechanic training, better enforcement, and probably other ideas that we haven't even thought of yet.

Ms. ESHOO. Let me ask the question this way. Say I am a Governor instead of a Member of Congress and I come to you with an idea for inspection and maintenance that isn't inside the envelope now.

What do I have to do in order to get you to approve. It is a pretty wide-ranging question, but just give me a taste of what I would have to go through in order to have you, the Federal agency, say, okay, Governor Eshoo, you can go out and do this now.

Ms. NICHOLS. Well, we would——

Ms. ESHOO. And I have no intentions of being a Governor, and I will stick with that.

Ms. NICHOLS. I was going to say this is a great announcement here today, Governor.

Ms. ESHOO. I don't think anyone was waiting for it.

Ms. NICHOLS. We would approach this the way we did with the State of California, which did exactly what you are proposing, which is today we will work with you to establish the credits for whatever it is that you are trying to do; we will attempt to find a way to establish those credits, to evaluate your research, to give you additional time to the maximum extent of flexibility that is allowed to us by law; to develop the kind of program that you want to do.

Ms. ESHOO. Thank you. Thank you, Mr. Chairman.

Mr. BARTON. Thank you. Mr. Burr of North Carolina.

Mr. BURR. Ms. Nichols, how are you today?

Ms. NICHOLS. Just fine, thank you.

Mr. BURR. Let me ask you to define something for me. I am having just a very difficult time understanding "real world." Would you take a stab at that for me?

Ms. NICHOLS. You mean the term?

Mr. BURR. When you use the term, what are you suggesting, "real world"?

Ms. NICHOLS. Well, I may have used that phrase with respect to air quality measurements when we were talking about ambient air or with respect to emissions data, about what actually comes out of the tailpipe of cars. Obviously, there is also the real world of what people experience and how they respond to whatever it is that the government is asking them to do.

Mr. BURR. You made the comment that Minneapolis was not an example of "real world" situations and we were talking about the Minnesota study, and you made the statement that in Minneapolis, you did not consider that a real world situation and I am trying to determine why and how many more of those we have got across the country.

Ms. NICHOLS. I am sorry if my remarks came out that way because that wasn't my intention. What I was trying to convey is that we don't believe the study that was referred to in yesterday's testimony is a valid piece of evidence that inspection and maintenance programs are not having an effect on the real world.

Mr. BURR. Based upon?

Ms. NICHOLS. Based upon the methodology of that particular study.

Mr. BURR. Not based upon the location that it was done in?

Ms. NICHOLS. It has nothing to do with Minneapolis or Minnesota. I was born in Minnesota and I know it is the real world.

Mr. BURR. Good. Good.

Ms. NICHOLS. I have a birth certificate to prove it.

Mr. BURR. You did make a statement though about the real world political and policy implications. How do I interpret "real world" as it relates to the political and policy implications?

Ms. NICHOLS. With respect to the Minnesota studies or in——

Mr. BURR. No, it was actually after the Minnesota studies. I sort of added that one. I thought it was an interesting twist.

Do politics have a place in clean air?

Ms. NICHOLS. Clearly, State legislatures and Governors have options under the Clean Air Act in a variety of ways to make choices about what types of programs they are going to enact to clean up the air. The way this statute works, as you know——

Mr. BURR. But we all have the same standard, the same goals?

Ms. NICHOLS. We have the same standards, we have the same goals but we have a lot of flexibility as to how we achieve that goal and there is the realm where I feel it is appropriate for politics and policy and real world considerations to enter into what those States choose to do.

Mr. BURR. Is there also a variation in compliance?

Ms. NICHOLS. I am not sure I understand that question.

Mr. BURR. Some States reach a higher level of compliance than others?

Ms. NICHOLS. Clearly, every State has the opportunity to have a more stringent program if they want to do so. There is a requirement that States enforce their programs once they have adopted them or the Federal Government is required to step in and enforce the programs if a State is simply failing to do so, but we have not seen that happen.

Mr. BURR. That has not happened?

Ms. NICHOLS. No.

Mr. BURR. Let me ask you about just a statement in your testimony. About 20 to 40 percent of the vehicles on the road today need repairs to bring down emission levels. Is that a pretty accurate count, do you think?

Ms. NICHOLS. We believe that, if you look at the three pollutants that we are trying to deal with here in the inspection and maintenance programs, that is the proportion of the fleet that would benefit by a repair up to the levels that are in the Clean Air Act. That would bring those levels down to the average of what they could attain.

Mr. BURR. We had three individuals testify yesterday and all agreed that of those cars that were marginal emitters, that didn't pass, that after repair, the emissions problem was worse than when they came in. Does that indicate or should that indicate to us that there is a tremendous flaw in the way that we are trying to approach cleaning up the air?

Ms. NICHOLS. I don't think so because the way that the tests are designed, they are aimed at flunking cars that are much out of alignment, they are not aimed at the car that a little tweak of some knob will bring back in and then it will go right back out again when the car is on the road.

The kinds of cars that are flunking I/M tests that are well designed I/M tests are cars that have broken exhaust gas recirculation valves, cars where the evaporative emissions system isn't functioning at all, cars where the catalyst has fallen off or has been removed and these are cars that will clearly benefit from having a repair done on them and we have seen plenty of tests that show that is the case.

Mr. BURR. One more question if I could, Mr. Chairman?

Mr. BARTON. Well, make it a quick one.

Mr. BURR. There was quite a bit of testimony yesterday and I will use the phrase that our witness used, that many people are "clean for a day." How extensive is the problem of individuals whose car is in compliance for 1 day out of 365?

Ms. NICHOLS. Well, we have done a fair amount of auditing and other kinds of surveillance to try to detect how much of a problem that is. We think that there are some individuals out there who are deliberately tampering in order to try to meet a test. That is really one of the reasons why the new dynamometer tests were designed is that it makes it almost impossible for someone to do the kind of quick fix that will enable them to pass for a day and then undo it later on.

If your catalyst is removed, you would have to put it back on again and then there wouldn't be much incentive to rip it right back off again but that is also why we would like to do more remote sensing to detect that particular individual. But we don't think that is a very large problem. It is much easier to do that on the old style test that was just an idle test.

Mr. BURR. Thank you, Mr. Chairman.

Mr. BARTON. The gentleman's time has expired.

I recognize the gentleman from Pennsylvania, Mr. Klink.

Mr. KLINK. Thank you very much.

Mr. BARTON. You have a constituent out in the audience that was worried about you yesterday since you weren't here, Mr. Haddid.

Mr. KLINK. Mr. Haddid, yes.

Mr. BARTON. Let the record show that Mr. Klink is here today and he is one of your biggest fans.

Mr. KLINK. Thank you very much. Let the record show it is hard to do welfare reform on the Floor of the House and deal with Clean Air at the same time. I have not figured out how we divide ourselves and be in two buildings at the same time but I appreciate seeing Mr. Haddid here. In a previous life, I used to go out and interview him about these matters and others and it is good to see him here.

First of all, Administrator Nichols, I hope that you have gotten some water there and taken care of that cough.

Ms. NICHOLS. Yes, thank you.

Mr. KLINK. You know, my difficulty with this and rather than starting off taking a close and technical look at this entire system as some of this questioning has done, my difficulty with all of this is you know, you seem like such a nice person and to listen to you talk today we don't have any problem but I know better. I have to know which EPA we are dealing with. Are we dealing with the EPA that says, we're flexible, we can work with you, what's the

problem? Or are we dealing with the one that threatened my State of Pennsylvania with sanctions when we asked that you be flexible? That is my problem.

I understand the difficulties, Ms. Nichols, about opening the Clean Air Act. But on the other hand, I am very reluctant to sit here and listen to the folks from EPA say, trust us. I have been in politics long enough to know that sometimes "trust me" doesn't mean what you think it means.

I would just like to find out. I mean, how do we know that you are going to continue to be as flexible as you have told all of these questioners on both sides of the aisle that you are going to be. What kind of guarantee do we have that there is going to be flexibility that we are going to be able to work with you and particularly I would say I am concerned about it, not that we want to be parochial within our State of Pennsylvania, but Pittsburgh doesn't appear to have a problem.

As I have said so many times at these hearings before, when it comes to clean air, we gave at the office. We lost 155,000 manufacturing jobs in western Pennsylvania because we were busy putting capital improvements into cleaning the air and not making those improvements to improve manufacturing and we are just about tapped out.

We are reluctant to want to give much more and to certainly not want to trust EPA to tell us trust us, we'll give you a wink and a nod and we don't really have to live by the letter of this law. Well, you may think that and you are a nice person to get along with but what happens when you and I are gone and our grandchildren are here fighting this. I have to have something more definitive and what can you give me?

Ms. NICHOLS. Well, what I think you have to look to is our deeds and not just our words; I certainly agree with you on that. We are, as the Administrator has indicated in writing, in the process of developing a revision to the existing enhanced inspection and maintenance regulations. That will be formally proposed. It has been circulated and has been the subject of a number of informal meetings with State agencies as well as with industry and other interested groups. But the formal proposal will be out within a month and it will be finalized in August. That is the commitment the Administrator has made.

Prior to the time, we have put out in the form of official Agency policy guidance a memo on the credits that are available for different types of programs and we have discussed with a number of States, including Delaware, the possibility of using this approach which I mentioned earlier, which is the low enhanced program for States under the Clean Air Act have to do an enhanced inspection and maintenance program but that don't need a lot of additional emissions reductions because of other measures such as the stationary source control measures that you have indicated have taken place in your district. We believe that with very minor improvements to the testing equipment, those areas will be able to meet the new performance standard and that that will not then be an issue.

Mr. KLINK. I have a sheet here which has put 15 of the 29 moderate areas meeting the NAAQS in 1991 to 1993. Pittsburgh, Penn-

sylvania is one of them. Indeed, Allegheny County in which the city of Pittsburgh is situated said, besides fine particulates and sulfur dioxides in essence they have really cleaned up the air and they talk about all of these kind of things.

My question, again, gets back to what happened to the so-called 50 percent rule that you had? You wanted to push everybody, it appeared, into the centralized testing system. People don't want that. They understand that the air is a whole lot cleaner now than it was before.

Where do we stand with this and this new flexibility that you are showing?

Ms. NICHOLS. Well, in the case of Pittsburgh, as we understand it, you have the 3 years of clean data that show attainment in the Pittsburgh area and if the State will go forward with a redesignation request, EPA will pursue that redesignation and then the Pittsburgh area would be found to be in attainment and you would simply have to have a maintenance plan as part of that redesignation approach.

Mr. KLINK. I see my time has expired.

Mr. BARTON. That is a good way to end, though. I think they are inviting a redesignation request from the city of Pittsburgh. I would be glad to help the gentleman make that happen. He would be a hero.

Mr. KLINK. I think that we will look forward to the next round to pursue that. Thank you.

Mr. BARTON. I now recognize the gentleman from Pennsylvania, Mr. Greenwood.

Mr. GREENWOOD. Thank you, Mr. Chairman. Welcome.

Good to see you again. I am interested on page 6 of your testimony, you refer to the EPA's covert audits showing improper testing 81 percent of the time. Could you tell us a little bit about the methodology of that study and be very brief because I have a series of questions. And then what I would like you to do is send me the documentation that would demonstrate exactly what was done.

Ms. NICHOLS. I think I better simply send you some more data about that. But we are referring to undercover cars that are sent through a testing station.

Mr. GREENWOOD. I understand that. What I am interested in is you talk about the fundamental problem is a "conflict of interest" in which inspectors have strong incentives to pass cars that should fail and are in need of repairs. That is quite an indictment.

If 81 percent of the time, these undercover audits showed that the mechanics conflict of interest was appearing there, what confuses me is if I am a mechanic, my interest is soaking you for $150 or $300 or $450, not getting the minimum amount from you that would just cover my costs or the costs of the inspection and letting you go. There is some allegation that it may be in my long-term interest to keep you as a customer. I don't believe that; that has never been the way I have been treated at any time I have taken my car anywhere. I have never seen anybody say, this really needs to be fixed but I would like to see you come back so we are just going to charge you $20. It's always the reverse.

Particularly since I would assume that although you don't seem to know the facts about the study, that when you had these clan-

destine vehicles with clandestine, I suppose, EPA employees going in, one would assume it is not necessarily the case that there is a buddy-buddy relationship between your clandestine EPA undercover operator here and the repair shop. Where is the conflict of interest? How would that arise in the clandestine audit?

Ms. NICHOLS. I think that the situation that you are referring to is one that is deserving in terms of the motivation of the owner, is deserving of more of perhaps a sociological or psychological type of study than has ever been done in the past. I mean, the motivation is one that we can only speculate about because we haven't interviewed all of these people.

But there have been a number of cases brought in California which has, as I indicated earlier, the most aggressive enforcement program against companies or businesses that are in the smog inspection business and that is what they have come up with in terms of the motivation behind the individuals who were in effect selling smog certificates. It is not very much work. It is an easy whatever it is in California, it is about $35 now.

Mr. GREENWOOD. I understand that but if we are going to proceed here in terms of this public policy on the basis of the assumptions that something like 81 percent of the time we get a dishonest result when we take a car to a service station and one would assume that assumes some sort of collusion between the motorist and the repair shop, that is sort of saying 81 percent of Americans are that dishonest that they would go in and buy their way through an inspection and that is a pretty, as I say, that is a pretty strong indictment.

Let me move on to another approach here. In your testimony, you talked about the three basic elements of cleaning the air as relates to mobile sources, and that is cleaner cars, cleaner fuels and better maintenance. Clearly, we know that we are making tremendous, as your testimony indicates, tremendous strides in cleaner cars and cleaner fuels.

Has EPA done modeling as to where the trend line would take us if we just forgot about this enhanced emissions business and just allowed the trend lines on cleaner cars and cleaner fuels to continue?

Ms. NICHOLS. Yes, we do have those. I am not sure if I have a chart with me at the moment. No we didn't bring a chart with us that would be a good illustration of that. But the inspection and maintenance programs themselves in many States are the largest chunk of the 15 percent VOC reduction plans that those States are submitting as part of their attainment plans. For the moderate, severe and serious air quality areas, if they don't begin implementing an enhanced I/M program within the next couple of years, I think we will see the actual benefits of our other air quality programs beginning to disappear.

This summary of what we found, I guess looking across the country, was that it is 15 to 50 percent of the emissions reductions that were needed by 1996 were intended to come from those programs so that would indicate that those areas that have those deadlines would not be able to achieve the Federal clean air health-based standards without these programs.

There is something cyclical about the argument. We are telling the States what their plans need to look like and, surprise surprise, they come back and tell us that 15 to 50 percent of their reductions are going to come from the things that we are requiring of them.

Mr. BARTON. Jim will have another opportunity to continue the question.

The gentleman from California, Mr. Waxman.

Mr. WAXMAN. Thank you, Mr. Chairman. Ms. Nichols, we are pleased to see you and Mr. Wilson.

Just to follow up on Mr. Greenwood's questioning, to get all of this in perspective, this I/M program reduces a lot of reductions in emissions, doesn't it?

Ms. NICHOLS. Yes, and States are counting on those reductions in order to meet their air quality goals.

Mr. WAXMAN. Can heavily polluted cities achieve clean air without an I/M program?

Ms. NICHOLS. It would be extremely difficult. I wouldn't ever say it is impossible, because under extreme circumstances that might not be politically acceptable, a State could choose to shut down their businesses.

There are some States, for example, I mentioned Delaware earlier, where vehicles are not a very large proportion of their problem, where they don't need a very aggressive inspection program. But in most of the States that have the worst air quality problems, we don't see any alternative to a good inspection and maintenance program, and certainly there isn't anything that is as cost effective.

Mr. WAXMAN. Let me ask you about the cost effectiveness. That seems to be very much on the minds of all of us here if we are going to ask that our constituents have to do something, or if we are going to reduce pollution by some regulation, we want to be sure that we are getting the biggest bang for our buck.

How cost effective is inspection and maintenance reductions compared to reductions from other means?

Ms. NICHOLS. We have estimated that with a good I/M program which, I guess, we would define as being the simplest kind of program that we could design, that the cost of a ton of VOC reduction was about $500 compared with regulations that we are actually approving for some VOC measures on stationary sources that go up as high as $10,000.

Mr. BARTON. Would the gentleman yield for an addendum to that?

Mr. WAXMAN. Yes.

Mr. BARTON. Could you put on the record your definition of a good I/M program? I mean, what is it?

Ms. NICHOLS. I think the Arizona program is an excellent I/M program. I would simply submit to you the program that is currently being operated in the State of Arizona in the Phoenix areas as a good program.

It is a biennial program. It is a test-only program. There are measures in there to alleviate some of the burden on poor people. There is a sufficient network of stations so that people aren't waiting too long to get their cars inspected, and it is a well accepted program.

Mr. WAXMAN. Can you quantify it? How much do we pay for every reduction of pollution in that kind of a program?

Ms. NICHOLS. I think the $500, I'd say, may be a range. Just to be careful, say $500 to $1,000 per ton of VOC's in that program.

Mr. WAXMAN. So you have $500 to $1,000 for reduction of every ton of VOC's there, and if we didn't have reductions from an I/M, how much would we be paying for equivalent reductions from other kinds of sources, particularly stationary sources?

Ms. NICHOLS. Well, in the case of Arizona, they, frankly, were looking at growth controls as the only alternative because it is a growing areas, and they would have to do some pretty drastic things in terms of limitations on people being able to use cars at all.

And I wouldn't even begin to quantify that, but in terms of a more industrialized area where they would be going after their stationary source reductions, again we have programs in that area that range from $5,000 to $10,000 a ton dealing with things like open burning, controls on the fumes from body shops, paint and coating operations. There is a whole variety of businesses, medium to small businesses, that would end up having to face a greater control burden as a result of not doing an inspection maintenance program.

Mr. WAXMAN. We don't want to inconvenience our constituents any more than is necessary, but people have been willing to have their cars tested because they understand it is a way to achieve reductions and a way to achieve the reductions in a cost effective manner.

Are we really looking at a political complaint from the service station owners that they want to be able to control the inspection and maintenance program as opposed to a centralized one that might be more efficient?

Are we looking at a political pressure that may mean that if we don't get those reductions we are going to cause lack of growth in areas or reductions that have to be achieved by small businesses at a greater cost to everybody involved?

Ms. NICHOLS. Well, Mr. Waxman, it is true that in areas that have had an existing network of tests being done at repair shops, there has been great resistance from the service station industry to changing over to another type of system, even though we have, I believe, demonstrated successfully that those shops would actually end up with more business on the repair side.

But I think that the struggle here is that this is an area where States are being asked to make a commitment to something that is going to be an intrusion in the lives of individual citizens, and they are just very leery of what the political backlash might be.

And we understand that, and, frankly, I will say this personally, I think EPA was put in the position right after the Clean Air Act amendments were passed of sort of taking on the role of the heavy, and maybe at the State level, some State agencies went to their legislatures and just said don't ask any questions; just do it this way because EPA will punish you if you don't.

And now the they are going to the point of actually implementing those programs, people are asking questions. Why do we have to do it this way? Is there a better way to do it?

We don't think that that is inappropriate. We think that, in fact, is totally appropriate, that people should be asked to participate in making the decision about how these programs are going to be run.

But nevertheless, on a technical basis in terms of what we know about these programs, we would have to advise that the test-only type of approach is a more cost effective program.

Mr. BARTON. The gentleman's time is expired. I recognize the gentleman from California, Mr. Cox.

Mr. COX. Thank you very much, Ms. Nichols. I too was born in Minnesota, so I want to get back to the Minnesota State.

Mr. WAXMAN. That's the real California.

Mr. COX. I agree with you it is the real—my grandparents are from California. That is how I got out there. My dad grew up out there and so on.

You said in response to Mr. Waxman's question, which was something of a leading question. He said the I/M program produces a lot of reductions in pollution. And you answered, yes, it does.

I want to get into what "a lot" is because the study by Professor Kittelson and Mr. Scherrer at the University of Minnesota suggests that a lot is within the margin of error, and you might substitute zero. That was the Minnesota study.

The Minnesota study showed that over the period of time they tested the results of the I/M program in Minnesota there was an average reduction in carbon monoxide attributable to I/M program testing and implementation of 1.3 percent; the margin of error was 1.4 percent. Therefore, you might say there was zero result, but I just want you to tell me whether or not you think that is a lot of reduction, zero.

Ms. NICHOLS. If I thought that the actual reductions were zero, I would say that that is not a large number.

Mr. COX. So you just discount this University of Minnesota study? You think it is just a bad study?

Ms. NICHOLS. I think it is a study. I don't think it demonstrates much of anything, I don't think, that can be used as a basis to make public policy.

Mr. COX. And what the EPA data shows is the real reduction in Minnesota, in Minneapolis?

Ms. NICHOLS. We have another study which, I believe, is cited in the book that was distributed to all the members of the committee that is a Wisconsin study that also attempted to correlate the benefits of this program with the real world.

And there are others that are referred to in this briefing book.

Mr. COX. Name one. I mean, what's the number? What do you think at EPA is the actual reduction in carbon monoxide for Minnesota?

Ms. NICHOLS. Based on the emissions data studies that we have, we think that the results are, again, on the order of 30 percent in VOC, 30 percent for carbon monoxide, and somewhere around 10 to 15 percent for NO_x in terms of emissions from cars that have been tested in a testing and repair system.

Mr. COX. Ms. Nichols, is that based on data collection, ambient air quality, data points collection?

Mr. WAXMAN. You went out and measured it and found out, in other words?

Mr. COX. Or is that a model?

Ms. NICHOLS. No. I am referring now to actual emissions of automobiles. We do not believe that the methodology of the Minnesota study is adequate to tell you what the ambient air quality benefits or lack of benefits from the I/M program were because of confounding variables.

Mr. COX. You have a study that we need to look at carefully because we've just heard a whole day of testimony yesterday about the Minnesota study produced by the University of Minnesota, unpaid by EPA, unbiased as best we can tell, and certainly rigorous based on what we've analyzed here.

I want to know what study you are suggesting produces better data for that same areas in Minnesota.

Ms. NICHOLS. The air quality study that I was referring to earlier—I was just trying to check the name of the author because I couldn't read it. It is produced by someone named Tiao, which was done in Wisconsin.

Mr. COX. No, I'm talking about Minnesota. You've gone in Minnesota and measured the ambient air quality and come up with a different number than the University of Minnesota?

Ms. NICHOLS. No.

Mr. COX. You have not?

Ms. NICHOLS. We use the same air quality monitoring stations.

Mr. COX. They use the same stations you do?

Ms. NICHOLS. Air quality is monitored——

Mr. COX. And, therefore, their numbers just had bad equipment, they didn't measure it?

Ms. NICHOLS. No. We are not contesting that the air quality is what the air quality is.

What we are saying is that there are confounding variables such as vehicle miles traveled and other types of control measures that are used that don't allow you to determine the effectiveness or lack of effectiveness of the inspection program.

Mr. COX. Which study did you do that we should look at that gives us 30 percent reduction, did you say?

Ms. NICHOLS. I have not stated that there is an ambient air quality study that gives you the numbers that I cited for emissions benefits. I do not have such a study.

Mr. COX. You have no study for Minnesota that says there is a reduction of any number?

Ms. NICHOLS. We have ambient air quality data from Minnesota that shows that Minnesota in general is making progress towards cleaning up the air, and we have lots of studies of the emissions of vehicles.

Mr. COX. The University of Minnesota tells us that over a 7-year period the average reduction in carbon monoxide is a result of two factors: emission control devices and fleet turnover. It was 35 percent.

So we know the air is getting cleaner. The question is what is causing it. You are taking credit for the I/M program.

I guess what I want to know here is whether or not bureaucrats have strong incentives to justify extravagant claims for massive multi-billion dollar regulatory schemes that they have imposed.

We've got an independent study here, somebody not paid by the EPA, and you haven't done your own study. You just say that you don't like theirs.

Mr. WAXMAN. Will the gentleman yield?

Mr. BARTON. The gentleman's time is expired.

Mr. WAXMAN. I ask unanimous consent the gentleman be given an additional minute.

Mr. BARTON. Without objection.

Mr. COX. Any help I can get in finding out if EPA has a study in Minnesota that reaches a different result and that I can refer to, I would be happy to look at it.

Mr. WAXMAN. Will the gentleman yield? If you put your California hat on and not your Minnesota hat, we are going to the hear about a California pilot program where they've done an analysis of inspection and maintenance that achieves greater reductions than are on that chart.

Now, you are emphasizing the Minnesota study, but let's look at a successful——

Mr. COX. If the gentleman would permit me to reclaim the time that he so generously had me yielded by unanimous consent.

I would just point out that the study to which the gentleman refers, if I understand the study to which he refers correctly, is a model.

And one of the arguments we are having here today is whether or not we can keep looking at models and ignoring actual physical quantities measured in the real world, which is what the University of Minnesota did.

Mr. WAXMAN. If the gentleman will yield. The California program is a real-world study of actual emissions, not simply a model.

Mr. COX. We are glad there are real world activities going on out in California.

Mr. BARTON. The gentlelady from Oregon, Ms. Furse.

Ms. FURSE. Ms. Nichols, Oregon has taken great advantage of the flexibility of the Clean Air Act to develop air pollution reduction strategies, and we meet the act's requirements and our plans are widely supported by the Oregon business community.

In fact, Portland, Oregon, is in the process of developing an air maintenance plan. Under this plan we voluntarily adopt an enhanced I/M plan as the most cost effective means to achieve pollution reduction.

Could you tell me if you are finding in other States, as we have found in Oregon, that small businesses in local communities are supporting the I/M programs and, in fact, the enhanced I/M programs?

Ms. NICHOLS. Initially, when many States passed the legislation for the enhanced I/M programs, there was support from small business and from some groups that represent consumers as well as people who are concerned about health such as the American Lunch Association and so forth.

I think, frankly, that one of the problems that we've had is that as the years have gone by since the 1990 amendments were passed and States delayed getting their programs started, they had an opportunity to begin to worry more about the reaction that might occur when these programs started upon, and some of the advo-

cates, I think, may have forgotten the reasons why those programs were enacted in the first place.

I really believe that there is an obligation on all of us, and I would put EPA at the forefront, who are advocates for programs to clean up the air to do a better job than we have of educating and reaching out to the public about the need for these programs.

I think there was too much of a reliance on just saying: it is the law; people will do it, and that is sufficient.

So I think you do have to go back and build the support of the public behind these programs because obviously there is some cost and some inconvenience associated with it.

Ms. FURSE. You mentioned earlier that one of the alternatives that a community would have other than this less costly I/M program where you can remove more pollutants for less cost might be a reduction in growth.

Ms. NICHOLS. Yes. That is exactly right. I think maybe an example that I could use here is the State of Maine which is a State that, unfortunately, has an air quality problem which is largely caused by pollution which they don't generate, but they do have some local problems of their own.

The State had opted into a very good enhanced program, and then when they began the program there were some problems with the start-up: long lines and some problems with the equipment and so forth. So they just pulled the plug on the program.

The State is now going back and through a very open public process they are asking all constituency groups to come to the table and say how they want to go about achieving the emission reductions that they need.

I believe that they will then make a determination on a type of program that will satisfy their needs, and when people look at these programs and compare them with other programs, I think you begin to see that they are more attractive than if you just look at it in a vacuum.

Ms. FURSE. I represent the fastest-growing county in Oregon. Of course, we want to see more growth of business. I think there is a strong feeling there that if we can reduce air pollution through reducing car pollution, we can then allow more growth of factories, especially our very successful high-tech industry.

Ms. NICHOLS. Yes. Some of the strongest support for enhanced inspection programs has come from the business community, particularly in areas where there has been a lot of effort already made to clean up the air because these businesses have invested large sums of money already in their clean-up programs, and frankly they feel that just as a matter of fairness, the motorist should be doing its part as well.

Ms. FURSE. Thank you, Mr. Chairman. I yield back to balance of my time.

Mr. BARTON. I thank the gentlelady. That is all the members of the subcommittee. We have a member of the full committee and a congressman from Maine who has asked to audit the hearing.

We now recognize Mr. Bilbray, a member of the full committee.

Mr. BILBRAY. Thank you. Good morning, Mary. We seem to be running into each other a lot recently.

You know, as a member of the State Air Resources Board of the State of California, I was very impressed with the initial numbers of the I/M program. On paper it looked very, very promising.

I run into some concerns about real-life application. What is the avoidance rate that you figure exists right now under the existing system?

Ms. NICHOLS. Of people just not getting their cars inspected? I am sorry, I was conferring with my colleagues.

Mr. BILBRAY. I am sorry to ask such a difficult question.

Ms. NICHOLS. It is a difficult question to answer because it varies a lot from State to State and California, as you well know, is a State that has a large number of unregistered motorists in it. The figure that my staff was just quoting me is 20 percent, as high as 20 percent unregistered motorists.

Mr. BILBRAY. I am glad to see that and I am impressed. Now, what is your projected avoidance with the I/M program? Seeing that we are 20 percent right now, have you run the numbers of how much increase in avoidance we will have with I/M?

Ms. NICHOLS. It could be quite high. I don't know that I want to give you a figure but I have heard some very high numbers.

Mr. BILBRAY. And that has been figured in. My concern is, and correct me if I am wrong, when I looked at the numbers, the hard numbers and looked at the promising projections for I/M in California, I did not see those avoidances being given the weight that practical application had shown by my experience in the Air Resources Board and in the AIR district work.

Ms. NICHOLS. If I may just say that that is precisely why we think that the greater use of remote sensing or perhaps other technologies that we don't know about yet could be a way to address that problem.

Mr. BILBRAY. Because you know our experience, especially in California in San Diego where we may have 1 percent, just 1 percent of the traffic is coming in from Mexico, totally uncontrolled, totally unmonitored, constitutes 14 percent of the emissions from automobiles.

See, my problem is when you start getting to these real world applications, there is a degree of fairness too involved.

What we are proposing with the I/M system is that those who are already fulfilling their responsibilities by the law are now going to be required to carry more burden, do more expenses, be required to go over and above, and have a little more problems when, in fact, there has not been a comprehensive addressing of the issue that we are talking about 20 percent of the vehicles. You want to talk about the emission problem? That is scary, that what we are probably doing is leaving a huge section of those who are polluting our air totally out of the system, because it is easier to continue to place more command and control on those who are law abiding and following the rules now than it is to go back and try to take care of the gaping hole of enforcement problems.

It doesn't work so well on paper to talk about going to enforcement because we do have this. What strategy do we have? We have I/M.

I am hearing today that EPA is saying that the remote sensing system doesn't work. Because if it doesn't, I am looking at all these

other strategies that aren't worth the paper they are written on, because you are sitting with 20 percent of the vehicles taking a walk, and that 20 percent constitutes probably higher emissions than all your reductions of I/M combined. You understand my frustration.

We have worked together and, Mr. Chairman, I'm sorry, we have worked on this problem over the years and——

Ms. NICHOLS. If I could say a couple of things? First of all, we are not saying that remote sensing doesn't work. Believe me, we are saying that remote sensing is not yet a tool that could completely replace periodic testing.

Now, the issue that you are raising about the unregistered cars coming in from Mexico is of great concern to me and the whole issue of the border problem is one that, as you know, EPA has considerable investment in. We are working in Texas on a joint air pollution control district, actually attempting to conduct negotiations between the United States and Mexico on creating a joint program and the issue there will be in large part motor vehicle controls.

In the meantime, I think areas like San Diego may need to consider some measures that could be trans-boundary kinds of measures to deal with some of these confounding problems that you don't have control over.

Mr. BILBRAY. Mr. Chairman, could I ask for unanimous consent for one more minute to be able to close on this because I think we have just scratched the surface. Just one closing——

Mr. BARTON. How about 30 seconds?

Mr. BILBRAY. Thirty seconds.

The other issue; members of this body have heard me refer to the Soldiers and Sailors Act to where we have said that Federal employees who are employed by the military are exempt from having their car smogged in nonattainment areas. My point is that as we are placing burdens on States, we need to look at what the Federal Government has not done at all, and physician heal thyself. That we need to stop cars being brought into this country and being driven every day not being smogged and we have to take a look at our own governmental employees who we have said will not need to have their cars smogged, and I think that is something we need to do.

Mr. Chairman, I would ask that the letter from the California Environmental Protection Agency dated March 23, which is addressed to Congressman Waxman, be placed into the record because that will clarify certain items of this discussion.

Mr. BARTON. Without objection.

[The letter referred to follows:]

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
March 23, 1995.

HON. HENRY W. WAXMAN
House of Representatives, 2408 Rayburn House,
Washington, DC

DEAR MR. WAXMAN: Governor Wilson has provided me a copy of your March 21, 1995 letter to him concerning California's inspection and maintenance (I&M) pilot program. Many of the issues you raised appear to be based on considerable misinformation on the status of our program and interaction with the U.S. Environmental Protection Agency (U.S. EPA), and I am happy to provide some clarification.

First, you asked that California release the results of our pilot project. The pilot project consists of a number of studies addressing alternative testing equipment, repairability studies, remote sensing demonstration, U.S. EPA's assumed 50 percent discount on test and repair components, and a number of other measures to target our I/M program on the highest emitting vehicles. All this data has been provided to U.S. EPA. In fact, the data on alternative testing equipment and the remote sensing program has been with U.S. EPA for almost three months now.

Second, your letter states that the "EPA-California agreement envisioned that the pilot program would be used to assess whether California could use RSDs as a substitute for test-only inspections." This is a curious and inaccurate description of our agreement. Specifically, the Memorandum of Agreement states that the purpose of the remote sensing studies are to "quantify the emission reductions, above and beyond those required by U.S. EPA regulation, achievable from a remote sensing-based program that identifies gross emitting and other vehicles and requires the immediate out-of-cycle repair and retest of gross emitting vehicles at a test-only station."

In other words, the intended purpose of this study was to determine the extent to which remote sensing is able to be used to supplement a testing network, provide an ongoing check on the performance of the system as a whole, and provide a behavior-based deterrent to potential fraud. As specified in the accompanying protocol to the agreement, this study will be used to determine the extent to which a vehicle population can be covered by remote sensing, and at what cutpoints it would be possible to identify a sizeable percentage of the gross and high emitting vehicles. As you can see from the agreement's specific language reprinted above, the study was not oriented towards remote sensing as a potential replacement for a testing network, but in fact is specifically proposed as an additional tool for the network. We recognize that remote sensing is a rapidly evolving technology. The study will help us determine just how much it can be used in our hybrid program.

Third, your letter states that the "results of the pilot project were required to be reported by December 31, 1994. However, there has been no public report of the results by your Administration." The agreement with U.S. EPA required us to provide the data to EPA by that date. As indicated above, the data was provided in accordance with the agreement. In addition, preliminary results of the studies have been freely available and have been reported in open public hearings of the I/M Review Committee that has been appointed by the Governor and the Legislature. The committee's consultant is now completing their interpretation of the data which will then be presented by the Committee to the Administration. We know that U.S. EPA has been similarly analyzing the data we have provided them, and the results of both analyses will provide the basis of the final negotiations.

Fourth, you refer to a technical paper presented at the 16th North American Motor Vehicle Emissions Control Conference, and cite it as the "only public information about the pilot project." This statement clearly is erroneous as indicated above. The fact that a consultant with no involvement in the pilot project has the data to analyze further demonstrates this conclusion.

Fifth, you cite several presumed significant findings of this paper, including the statement that "the apparent failure of RSD means that we will probably have to rely on the use of test-only stations to meet the I/M performance standards . . ." This conclusion has bearing only if one assumes that the purpose of the remote sensing study was to evaluate remote sensing as a full substitute for some sort of testing network—either test-only or test and repair or some hybrid of both. But as our agreement with U.S. EPA clearly points out, this question is not relevant to our proposed program.

I have seen a copy of the paper you cite. It is authored by a former consultant with the old California I/M Review Committee that was replaced and reformed by the Legislature with the current, more representative Committee. The political bias of the author is clearly laid out in his introduction. An apparent professional bias is evident in that he chose to analyze the remote sensing project data on a research question of his own making, rather than the ones I describe above that are spelled out in our agreement with U.S. EPA—not remote sensing as a substitute but remote sensing as one tool and how far can we apply it. It is very easy to "discover" conspiracies and programmatic failures if one misconstrues who the players are, their motives, their agreements, and their research questions.

In making public policy, we have to rely on facts. Throughout this process, we have challenged U.S. EPA's regulations as not relying on facts and proven program performance, but instead on modeling assumptions and outdated data such as is the case of their 50 percent discount on test and repair components. The purpose of the agreement was to lay out specific research questions, develop current data, and complete our negotiations based on a fuller awareness of different I/M components and

how the public will react to them. As a result of our studies, U.S. EPA has already informed us that they will no longer insist on the overly expensive IM240 testing equipment, and instead accept ASM—as evident in their agreement with New Jersey.

Finally, your letter also states that a test-only network "appears to offer the surest, most cost-effective path to cleaner air." On the contrary, numerous states have attempted to implement U.S. EPA's original version of a test-only program, only to have it fail and be soundly rejected by consumers. I have enclosed a sample of press reports to this effect.

California has been spared the disruption and added expense other states have seen as result of U.S. EPA's attempt to impose a "one size fits all" model. Through the leadership of the California Legislature and Governor Wilson, California is embarking on I/M reforms that will clean our air. We will do it because the program design fits the needs and behavior of Californians—not those of the federal bureaucracy and computer models.

California is committed to an effective I/M program that meets or exceeds the performance standards, as specified in our State Implementation Plan. Should you wish further information on our program, I would be happy to meet with you to discuss the details of our plan to avoid any further misunderstanding in the future.

Sincerely,

JAMES M. STROCK

Mr. BARTON. The Chair now recognizes Mr. Wyden.

Ms. NICHOLS. Mr. Chairman, I'm sorry. Could I add one point here? I think it is important with respect to the comment of Mr. Bilbray.

Our interpretation of section 118 of the Clean Air Act is that it does require Federal employees and fleets to have their cars in San Diego tested before they can bring them onto bases there. The people cannot bring in out-of-State cars without having them smog checked to meet the California requirements. Now, we may need to have some further discussion on that issue because I know as a Californian that there are some issues about Federal facilities and whether they are complying. But that is our interpretation that they are not exempt.

Mr. BILBRAY. This is a Federal issue in all States that have military employees.

Mr. BARTON. The Chair would now recognize the gentleman from Oregon, Mr. Wyden.

Mr. WYDEN. Thank you very much, Mr. Chairman.

On this next round, Ms. Nichols, I think I want to stay away from the battle of the studies and really try to get out some of these questions relating to the hassle factor that our citizens have.

What we heard yesterday and this was the view of all of our witnesses is that remote sensing has not been shown to be an effective technology for detecting nitrogen oxide, the NO_x emissions. So you have got a situation where, to really pick up those serious emissions, people are going to be coming to an I/M program.

In the interest of the consumer, in the interest of one-stop shopping, doesn't it make sense if you have got the consumer going to those programs anyway, because everybody acknowledges remote sensing isn't picking up the NO_x emissions, wouldn't it make sense to do it all at once for the consumer and save the consumer the hassle and the rigmarole and the expense and the like?

Ms. NICHOLS. Well, we don't know of any alternative but a dynamometer type test to get at this problem of the NO_x emissions failures. There is also another thing that has to be done when the car is sitting there with an inspector in front of it and that is to look at the evaporative emissions. The VOC emissions, which are picked

up by the remote sensing equipment are only the tailpipe emissions failures but we are also seeing cars where the controls on evaporative emissions are not functioning and the only way that you can detect that is through a test that is done when the car is actually in the shop. That is why we are in favor of having those tests.

We still believe that remote sensing is an important component to get at this problem of the people whose cars just aren't registered at all as well as the issue that I know you have heard a lot about what happens to the cars between those tests. So we would really favor both.

Mr. WYDEN. I appreciate that and let's go then to the question of where the Agency is with remote sensing policy. I was very pleased that you all seemed to really be on the verge of issuing a policy with respect to emission reduction credits for remote sensing programs. I have a feeling my friend from Texas will be interested in seeing those credits put in place.

As far as I can tell, it is the State of California that is frustrating your ability to set up a credits policy because they are more than 2 months behind in terms of getting you a study. Maybe you would like to elaborate on this but it seems to me the faster the State of California gets that information to you, the faster we are going to get a credits policy and then have an arsenal if you will to try to reduce some of the hassle for the consumer.

Is that what is holding things up, the delay at the State of California?

Ms. NICHOLS. As we understand it, the California data are all in but they are still doing further analysis on those data and we are waiting until we receive that in order to issue the credits because we hope to be able to simply put a rubber stamp on whatever California comes up with.

Mr. WYDEN. The data is overdue, isn't it?

Ms. NICHOLS. Yes, by a couple of months. But as an EPA person, I can't be too critical of people who miss deadlines.

Mr. WYDEN. We are not going to belabor this. The point is, I would like to see a credits policy and the fact of the matter is, as I understand it, when California's information comes in then we will be in a position to set up a credits policy and I think the combination of credits and then thinking this through systematically about how to reduce the hassle and the inconvenience for people is what this issue is all about.

I said yesterday, I am very concerned about the possibility that in the age of sensors, when people go back and forth to work a couple of times a day and these sensors are going off, it is going to be critical that you set up a policy so that if they are false positives, people aren't running in all the time, that there ought to be some limits in terms of how often this kind of process is going to be inflicted on the citizens. I think these issues need to be thought through and we are going to work with the chairman who has been the leader of this to do it.

We thank you for your testimony today.

Mr. BARTON. I thank the gentleman.

The gentleman from Maine, Mr. Longley.

Mr. LONGLEY. Mr. Chairman, again, thank you for the courtesy of participating in this hearing.

Ms. Nichols, are you aware of a study that was done by the EPA on NO_x and VOC emissions in conjunction with the National Academy of Sciences?

Ms. NICHOLS. Yes, I am.

Mr. LONGLEY. Has that been submitted to the Congress?

Ms. NICHOLS. I believe it was, yes.

Mr. LONGLEY. Do you know when?

Ms. NICHOLS. The study is a couple of years old.

Mr. LONGLEY. I would appreciate if you could provide my office with a copy of that.

Ms. NICHOLS. I would be happy to do so.

Mr. LONGLEY. I believe it was due to be filed by February of 1992 or thereabouts.

Ms. NICHOLS. Yes. It was not quite on time but it was shortly thereafter. It was prior to my coming to the EPA in the fall of 1993.

Mr. LONGLEY. I will be curious about that because I noted the lighthearted reference to the EPA's inability to comply with deadlines. My understanding under the Clean Air Act is that that study was required to be done some 7 to 9 months before any of the 50 States were required to complete their State implementation plans and part of the rationale that Congress incorporated into the legislation was to enable the States to have a frame of reference, a scientific frame of reference as it relates to NO_x and VOC emissions and the extent to which technologies could, in effect, reduce them.

But, furthermore, it was also to provide air quality models or the basis for air quality models by which a State could determine whether in fact reducing emissions via the air emissions program could in effect produce quantifiable improvements in air quality.

Ms. NICHOLS. Separate from the NAS study, the Clean Air Act required use of better models for the State nonattainment plans.

Mr. LONGLEY. Correct, but I am referring to section 185(b).

Are you aware of a release that was either released out of Washington or California this morning indicating a failure rate of 50 percent on remote sensing devices?

Ms. NICHOLS. I saw a news article about it; I haven't actually seen the report.

Mr. LONGLEY. You are not aware of a report or the news release?

Ms. NICHOLS. I have not seen a press release. I saw a clipping from a news article in yesterday's Baltimore paper.

Mr. LONGLEY. I was just struck with the coincidence with the testimony that we received yesterday and the indication that the study was ongoing. Bear in mind, one of the issues that I am observing in this hearing process is the extent to which the EPA is even open to the points of view of others and I am going to be very interested to see that release if you could obtain a copy of that for me, I would also appreciate it.

You mentioned look to our deeds and not to our words. I want to just kind of give you a frame of reference where I am coming from. My district was the first district in the country to implement enhanced air emissions automobile testing.

With all due respect, if you had testified in Maine as you testified this morning, you would have been hooted out of my State and I don't know, have you been to Maine?

Ms. NICHOLS. I have been to Maine, although——

Mr. LONGLEY. In the last 12 months?

Ms. NICHOLS. Not in the last 12 months. I have met with your commissioner and your Governor.

Mr. LONGLEY. Frankly, I would suggest that you spend some time in Maine because your description of the state of affairs was, frankly, quite gratuitous in the sense that following the implementation of air emissions testing last July 1, it took the citizens all of 6 weeks to demand the immediate suspension of the program which was done on a bipartisan basis. A group immediately obtained sufficient signatures to place the whole statute on the ballot to repeal it.

The discussion that is taking place now has nothing to do or very little to do with what kind of testing program the State is going to be adopting in the future. It has everything to do with the fact that 600,000 people were forced into a program that appears to have made no sense whatsoever and not have been based on real science and, furthermore, it has a lot to do with the fact that the State, in good faith, entered into a centralized testing contract for $40 million and is now facing the threat of lawsuit.

I might indicate last summer a representative of the EPA actually came into Maine and said, quote, unquote, if we took all of the cars in Maine and drove them into the ocean, Maine would still be in noncompliance with the requirements under the law. Furthermore, the administrator for the EPA in my own office as recently as 4 weeks ago indicated that there was no scientific basis whatsoever to conclude how much of the pollution in Maine that we were attempting in good faith to deal with was, in fact, the result of transport from other States. In fact, he gave me the range of anywhere from 30 to 70 percent.

The next day, as you might know, we had seven counties in various stages of noncompliance. The next day, 4 of the 7 counties were declared to be in compliance.

And I just want to end on this note. My observation is that there is a serious question as to whether your Agency is in fact following any science at all and my strong impression is that you seem to be making up the rules as you go along. I am just saying that because, frankly, I am very upset to hear this testimony and know what, in fact, is going on in my State.

Thank you, Mr. Chairman.

Mr. BARTON. I thank the gentleman from Maine. I think he has got very relevant, real world evidence to bring to this debate.

The gentleman from Pennsylvania, Mr. Klink.

Mr. BURR. Mr. Chairman, could I ask that Ms. Nichols have an opportunity just to respond to his comments?

Mr. BARTON. I think we are probably doing her a favor by not requesting her to respond.

Mr. BURR. If she prefers not to, that's fine.

Mr. BARTON. Would you wish to?

Ms. NICHOLS. I would just like to say that I regret that the gentleman interpreted my remarks as being flippant with regard to the problem in Maine. I certainly didn't mean that at all.

However, I would say that I am well aware of the air quality situation in Maine. It is true that we are still trying to establish the

precise amount of transport but we certainly know, based on the monitoring data, that four of the counties that were previously classified as nonattainment are now in compliance with the clean air standards and are eligible to be redesignated and we are looking forward to working with the State on that process as well as working with the State to develop an overall air quality attainment strategy that will satisfy the States' needs.

We believe based on our conversations with Commissioner Sullivan and Governor King, that they are anxious to have a plan that will meet the air quality standards. We believe the act is flexible enough to allow them to do it and this is not a matter of EPA trying to impose our will on the people of Maine.

Mr. LONGLEY. May I ask unanimous consent for a very quick question.

Mr. BARTON. I object to that. You are not a member of the committee and we've got other members who have waited. If there is time at the end, but at this point in time I am going to recognize the gentleman from Pennsylvania.

Mr. KLINK. Mr. Chairman, I thank you. When last we left, Ms. Nichols, when we left Pennsylvania, you were about the tell me that we should apply for redesignation.

Can I ask you to just explain that. We have been in attainment for the 3 years, and what would this mean? What are you telling me?

Let's make the headlines back in Pittsburgh.

Ms. NICHOLS. As I understand it, the State of Pennsylvania has submitted the package for a redesignation of the Pittsburgh areas based on the 3 years of clean data, the data that show compliance with the ozone standard.

However, the State has requested EPA not to proceed with processing that request because part of the process of granting a redesignation is first you look at whether the data establish that they are clean, which we believe they do, and second there has to be a maintenance plan that shows that the area is not going to slip back immediately into non-attainment the minute that they are redesignated.

The State of Pennsylvania is trying at this time to determine what type of inspection and maintenance program they are going to have as well as some other elements, I believe, of that maintenance plan.

So that process is on hold at the moment while the State tries to make up its mind.

Mr. KLINK. And I understand it, and I am a virgin in the woods on these issues, so you educate me a little bit. Pittsburgh would still have to implement a centralized inspection maintenance programs, as I understand, based on population.

Based on the rules it says that if you are, "Within any metropolitan statistical area of 100,000 or more in a designated ozone transportation region," and the other—this is from your own document here: "Implementation and urbanized portions of any serious or worse ozone or carbon monoxide non-attainment area with a 1980 Census-defined population of 200,000 or more."

So I think based on population alone, we still would have to be pushed toward the centralized demand.

Ms. NICHOLS. No, Mr. Klink. This is the issue that I mentioned earlier about the two-tier performance standard, the high performance and the low performance.

As part of a maintenance program, Pittsburgh would be eligible to use the low performance standard. Under the law they would still be required to have a so-called enhanced I/M program, but you could enhance a basic program, a test and repair program through upgrading the testing equipment that is used from the basic level that is being used now to a slightly better test, and quality under that definition which is in the new proposed regulations as an enhanced program and satisfy the maintenance requirements.

Again, the State might choose to do another type of program. EPA would not be pushing them to do that.

Mr. KLINK. So what about the 50 percent rule? In other words, we still would find ourselves bound to be pushed toward the centralized test because of the 50 percent rule.

Ms. NICHOLS. The issue of how many credits the State chooses to get or what type of program they choose to do is a balancing act for the State in terms of trading off other types of controls for inspection and maintenance.

Mr. KLINK. If you will excuse me. That is because you create that rule. It doesn't have to be a balancing act, but the EPA is forcing them to make that decision simply because you get a certain amount of credits for one inspection system; you get half that for another inspection system.

Ms. NICHOLS. That is not forcing them to make it up because we could apply lots of credits for other things that they might choose to do. That we have already issued guidance on other types of credits that the State could take from doing a mechanic certification program or from doing better types of testing, testing annually instead of every other, and we will be issuing credits on remote sensing, as I indicated earlier, as soon as we get the California data. And there may be other.

Mr. KLINK. We have cleaned our air up based on having the non centralized service and repair inspections. That has worked for us thus far.

I would still say that you are pushing us in that direction.

Getting back to the issue of flexibility. You are going to hear from one of our State senators, Jerry LaValle, who is going to be on the third panel today.

What he is going to tell you is if you had this new flexibility with working with States in the spring of 1994, we would have had the ability within the State of Pennsylvania to be more flexible with the system.

We were forced into signing, with what we felt a gun to our head, a contract with Envirotest. We could have gotten out of that for about $16 million last spring, but now, because you were not flexible, because a regional administrator, Pete Kosteier, was in all the newspapers and threatening to make an example out of the State of Pennsylvania, the legislators said: we can't back away from this thing.

Now we are stuck with that contract. Now all of a sudden you sit here, Ms. Nichols, and you're flexible. It is late for us now be-

cause it is going to cost upward toward $100 million now, if Envirotest decides they are going to come in.

Whereas, if you had this flexibility before, we could have sat down, had the same kind of a discussion that you seem to be willing to have with us now.

We could have taken care of this, but it was only because California stepped forward. I thank my friends in California. They are the ones that really pushed this issue that got the EPA to take a step back.

And only when our own State legislators overrode Governor Casey's veto that all of a sudden EPA stepped back and said, well, wait a minute; maybe we really got a fight on our hands in the State of Pennsylvania.

I hope you will be able to listen to Senator LaValle's testimony and some of the other people who will be testifying later today.

I just still am not a believer that there are great intentions. There are great intentions when we back you into a corner, but most of the time I find that you have backed us into a corner, and we've got some serious problems with that.

Mr. BARTON. The gentleman's time has expired. It seems that most eloquent statements come right at the 5-minute mark. People become very eloquent.

Mr. Burr of North Carolina.

Mr. Burr. Thank you, Mr. Chairman.

Ms. Nichols, let me go back to remote testing for just a minute, if I could.

Do you believe personally that remote testing works?

Ms. NICHOLS. I think, to answer your question, I think the issue is what does it work for.

I think it works now to some extent, although it is still showing too many cars failing and still not reading as many of the cars going past the remote sensing as you would like to be able to deploy a network.

I think that there are some issues before we would embark on a massive use of remote sensing that will need to be addressed.

Mr. BURR. What would be the reason. Let's assume that the data that you get in is more consistent with some of the independent data that says that, in fact, their success rate is pretty high, and failure rate is pretty low.

Let's say that tomorrow the EPA comes to that conclusion and they say, yes, remote testing is something that we should use.

Why would you incorporate it? Why would EPA incorporate remote testing? What would you be attempting to accomplish with it?

Ms. NICHOLS. We've already indicated that we believe that remote sensing is useful both as a way of checking up on the cars in between their regularly scheduled periodic testing and repairs, and as a way of checking up on the testing system itself because if you flag a car that has just been through a test and then it is failing on a remote sensing test, you want to send it to another diagnostic and find out what happened.

So it is useful both to obtain data about how the program is working, and it is also useful for a further check on cars that may be deliberately tampered with.

Mr. BURR. Do you envision possibly ever replacing the other tests?

Ms. NICHOLS. I think that that is a social issue more than it is a technical issue. I think eventually, if you could get the tests so that they worked for NO_x, so that it could identify the cars with NO_x problems, you'd still have an evaporative emissions problem.

Evaporative emissions are about 50 percent of the total emissions, volatile organic compounds, from today's cars. So you would want to have a test on the evaporative emission system, so you would still probably not ever totally replace a periodic check.

Mr. BURR. So you would have to have the periodic check to make sure that no cars got through—the remote sensing may have a fault, therefore, that there are some out there that we might have to get, so we may have to have——

Ms. NICHOLS. Well, and in the long-run, we have the mandatory requirements for new cars that they will have onboard diagnostic systems that are capable of actually detecting failures in the emissions control at the level of the car itself.

So that in theory someday down the road—maybe not too far down the road—you might be able to have a sensor that could read the car's onboard diagnostics as it was going by and send that car off to a repair station without having to do a visual check.

Mr. BURR. And that would be a tamper resistant thing, right?

Ms. NICHOLS. That is the theory, anyhow.

Mr. BURR. Okay. Let me go back to the I/M testing specifically. I know currently EPA supports that. If you didn't, I don't think there would be quite the articles and quite the aggressive nature that EPA is trying to defend the program.

You said yourself that possibly 20 percent of the automobiles in California don't go through testing.

Witness after witness has stated that potentially half the cars in the United States only produce 10 percent of the emissions.

Is it possible to have mandatory testing, and to have no measurable change in emissions?

Ms. NICHOLS. It is possible to design a program so poorly that it wouldn't achieve anything.

Mr. BURR. Would you consider that the program that we are talking about is designed that way?

Ms. NICHOLS. Are you referring to the program that we are currently operating in Arizona or that the State of Arizona is operating?

Mr. BURR. Let's talk about the enhanced I/M240.

Ms. NICHOLS. Yes.

Mr. BURR. You can classify that as a program like what you just discussed?

Ms. NICHOLS. I think a program like the program in Arizona which is using I/M240 testing in a test-only situation will achieve measurable reductions in not only emissions from vehicles, but it will also achieve measurable improvements in air quality in Arizona.

Mr. BURR. And given the——

Ms. NICHOLS. I am willing to stake my name on that.

Mr. BARTON. This has to conclude quickly.

Mr. BURR. Okay, let me just ask a follow-up, Mr. Chairman. That is, with the agreement from you that the statement of potentially in California—and I am going to carry that through to other States as well—potentially 20 percent of the automobiles may not go through testing, and that half the cars today in this country produce less than 10 percent of the emissions.

And I guess I am saying that we have an agreement right there that a lot of the cars that are in excess, great excess, the ones we are trying to catch, aren't being caught.

Can we make that statement, or is that a model telling us the program is going to work?

Ms. NICHOLS. We have real data both from Arizona and from California indicating that older cars that are registered and that are going through these programs are failing.

Mr. BURR. But does it take into account that 20 percent of the cars in California may not be going through testing?

Ms. NICHOLS. The modeling does take into account the cars that are not registered. It is the unregistered cars, and that is why our regulations and the programs that we have approved do require another component in addition to the testing at the station, which is remote sensing.

Mr. BARTON. We are going to have to terminate this. Let Mr. Greenwood ask his question. Mr. Greenwood.

Mr. GREENWOOD. Thank you, Mr. Chairman. Just quickly following up. Has EPA ever considered or modeled what would happen if they only required these enhanced inspection emissions programs, maintenance programs, for older vehicles.

Ms. NICHOLS. We would look at and, I believe, we have looked at programs which have exempted all cars during their first 2 years after their purchase.

Mr. GREENWOOD. Apparently, it is the case that 10 percent of the cars create 50 percent of the problem, and I think it is an accurate assumption that that is the oldest 10 percent of the cars out there.

Unfortunately, there is not a precise correlation. If there were, we would all be much better off.

Mr. GREENWOOD. Is there a general correlation?

Ms. NICHOLS. There is a general deterioration factor that all cars go through.

Mr. GREENWOOD. It is not just deterioration. It is how they were manufactured. We've made these incredible strides in air quality because of the redesign of the automobiles.

Ms. NICHOLS. Correct.

Mr. GREENWOOD. And cars obviously designed in the 1950's and 1960's and 1970's are very different than those that have been designed recently.

Ms. NICHOLS. Yes.

Mr. GREENWOOD. So my question is has EPA ever taken a look at what would happen, what kind of results you would have, if you just required cars built before 1980, for instance, to——

Ms. NICHOLS. Well, yes. The idea behind the hybrid programs is that the newer cars only get a relatively less aggressive kind of test, and the cars that are more likely to have the larger emissions failure would go through the less amount of repair.

Mr. GREENWOOD. You said that EPA has looked at that. Would you send to my office documents that show what you have done in terms of focusing on the older cars.

By the way, I asked Commissioner Browner for a letter about what the legal status of States that don't comply with trip reduction was on February 9; asked you about the letter on March 16. It is now March 24. Still haven't received any response at all, so I am looking forward to a big bundle in my mailbox soon.

Ms. Nichols, what percentage of Americans do you think would cheat on their auto emissions testing? Do you think most Americans would willfully cut a deal with an inspection station operator?

Ms. NICHOLS. No, I don't think that is what happens. And there actually have been some attempts to try to study this situation.

I think motorists don't know what happens when they take their car to be smog-checked.

Mr. GREENWOOD. So you don't think most Americans would willfully have the person who inspects this car say: I should flunk you, but I am going to pass.

You don't think most Americans would do that, do you?

Ms. NICHOLS. I don't think that that is the vast majority.

Mr. GREENWOOD. Do you think that most service station guys would do that?

Ms. NICHOLS. I think that there is a common practice in which people don't identify problems with cars that are brought in for inspection.

To what extent that is deliberate and to what extent that is sheer error on the part of the mechanic who is doing the testing, it is difficult to say because unfortunately, there isn't an auditor or inspector standing over the inspector every time that he is doing the test.

There have been a lot of samples that have been done that have indicated just plain failure to detect on visual inspections things that aren't there. People who are in the business who simply don't see it.

Mr. GREENWOOD. As I said earlier, that is so counter-intuitive to, I think, most Americans' experience in taking their cars.

There are any number of television shows that have shown just the opposite, where people bring perfectly good cars in and somebody finds—mechanics seem more inclined to make things up; to find problems that aren't there than vice versa.

Let me turn to Mr. Wilson for a moment. Does an entity by the name of Aspire mean anything to you?

Mr. WILSON. The name sounds familiar, but I don't remember why.

Mr. GREENWOOD. Okay. Do you know, to your knowledge has EPA or DOT been involved in any lobbying efforts, any funding of advocacy efforts with regard to this program?

Mr. WILSON. With regard to the I/M program?

Mr. GREENWOOD. Right.

Mr. WILSON. I was just informed that Aspire is a group, I guess, who does training for mechanics. We certainly have tried to work, both ourselves and with the industry, the service industry, in those who are involved in training the service industry to make sure——

Mr. GREENWOOD. So I would be correct that Aspire is a private entity contracting with EPA to train mechanics in the inspection of vehicles, is that right?

Mr. WILSON. They are a private entity. I am not getting the sense that they have a contract with us.

Mr. GREENWOOD. Would you do that and respond to me?

Mr. WILSON. You mean a contract to develop maintenance programs for I/M?

Mr. GREENWOOD. To advocate, educate. I am curious to know what Aspire's role is in this program and what its relationship is with any agency of the Federal Government.

Mr. WILSON. I would be happy to look into that.

Mr. GREENWOOD. Thank you.

Mr. BARTON. I thank the gentleman.

Mr. Cox of California.

Mr. COX. Thank you, Mr. Chairman.

Ms. Nichols, can you tell me where the MOBILE 5-A model was developed? Can you tell me when it was developed and who developed it?

Ms. NICHOLS. I am going to ask Mr. Wilson to respond to that question.

Mr. COX. Mr. Wilson?

Mr. WILSON. The model was developed by our Ann Arbor laboratory. It is the latest in a series of refinements to the MOBILE model. It would be developed by the EPA after a series of workshops and hearings with all the affected interest groups——

Mr. COX. Who was the chief architect of the model?

Mr. WILSON. I don't know that there was. There was a pretty good size team who was put together.

Mr. COX. Was there a team leader?

Mr. WILSON. I guess Phil Lorang is the division director at Ann Arbor. His division is responsible for the model.

Mr. COX. So to your knowledge, this model was developed in Ann Arbor?

Mr. WILSON. Yes, as I said, with lots of workshops and interaction with outside groups.

Mr. COX. When was the model first put into use?

Mr. WILSON. When 5-A was?

Mr. COX. Yes, 5-A.

Ms. NICHOLS. I believe it was 1993. It was under development for a period of time.

Mr. COX. This is the April 1994 issue of Air and Waste. I am now quoting in a piece written by Mr. Lawson about peer review of these models: " All of the current MOBILE emission models suffer from the same problem. None have been validated against real world data with urban traffic where our most severe air pollution problems are. The only time such a comparison was done with an urban fleet was during the 1987 Southern California Air Quality Study, 1987. It was shown that the MOBILE emission models greatly underpredicted carbon monoxide and HC emissions."

I have looked at the EPA's response to the Minnesota study and it is interesting that the response is that our model estimates a 9.2 percent reduction in motor vehicle carbon monoxide emissions and a 6.8 reduction in the overall carbon monoxide inventory of Min-

neapolis/St. Paul during the study's timeframe. Yet the University of Minnesota went out, these two gentlemen from the University of Minnesota went out, conducted this study over a 7-year period, measured data in the real world, subjected it to their own independent analysis, independent of EPA, independent of the regulatory Agency that has a rather significant vested interest in the mandates that it has put on everyone not being proved to be foolish and they found out that the decrease in carbon monoxide level was almost exactly the same rate that existed before 1991 before this was put into place, before the I/M program was put into place.

Carbon monoxide levels decreased at virtually the same rate for the first 2 years after inspections began as they did for the 5 years before inspections. This according to the abstract on the study.

The data show a steady 6 percent per year decrease in carbon monoxide levels since 1987 with no measurable change in that pattern after annual vehicle inspections began in July of 1991. So we have got these charts up here that say I/M gets big benefits but what we are really doing is saying that umbrellas cause rain or that people who stand in front of the elevator and watch the dial go and they say, you know, every time that dial moves, it makes the elevator go up.

What we said is, yes, there is an improvement in the air quality in Minneapolis and, by the way, in 1991 we put in this I/M program so we are going to take credit for this. And when the University of Minnesota study comes out and says the credit that you deserve is zero or specifically 1.3 percent within a margin of error of 1.4 percent, you say, no, no, no, because our model shows that we get a 9.2 percent reduction in motor vehicle carbon monoxide emissions. This is actually the response that was provided to the study. Well, we've got the model.

I just want to know when you are going to go out and do your own study and find out that these people are right or wrong.

Ms. NICHOLS. Let me say a couple of things about that and Mr. Wilson can jump in if he feels like I haven't adequately answered the question.

First of all, with respect to the model and the validity of the model, we do feed back in emissions data as well as fleet testing data into updating the model. However, we agree that there is concern about the model itself and its validity and EPA has committed and will implement this summer, I was informed earlier, a peer review of the MOBILE 5-A model using outside non-EPA experts in this area.

I think your committee will recognize that there is a limited pool of people in the world and they tend to have worked for one or the other key agencies, either EPA or the State of California. So in a sense, you can say most people have a bias on this issue but I think there are enough people now who have been in and out of the government and who have criticized the government that we have an adequate pool of people who are skeptics who can really fairly evaluate whether the model works or not.

Mr. COX. I think that is very much in order. I appreciate your undertaking to do that and I will yield back to the chairman just by noting we know it costs well over a billion dollars a year to do this and if we are going to spend a billion dollars a year, we want

to get some result. If the University of Minnesota study is right, we are getting zero result and anything else is more cost effective but it is a big waste of a billion dollars that should be going to clean up the environment. I yield back.

Mr. BARTON. I thank the gentleman from California for his questions.

The Chair is going to recognize himself for the final series of questions to this panel and I want to thank each of you for your consideration in coming and staying.

I am going to direct some of these questions to Mr. Wilson. It wouldn't be fair for me to demand that you be here and then not ask you some questions. I don't want you to feel like you were misled or deprived, as Mr. Wyden has said.

Now, you are currently the deputy assistant administrator to Ms. Nichols but prior to that I believe you were the director of the Mobile Source Division of EPA; is that correct?

Mr. WILSON. That's right.

Mr. BARTON. Now, you and I first met each other back in 1990 when we were debating the Clean Air Act and I saw this article in the Wall Street Journal about remote sensing and I thought it was great and I ran over here all excited to the committee and I got it adopted by unanimous consent, even Henry Waxman, who is not here to defend himself, voted for it or he didn't vote against it because it passed by voice vote by unanimous consent.

You and I had some discussions going to conference about that and you asked me to change the wording or agree to have the wording changed and being a stubborn Texan, I did not. So it says "shall," "remote sensing shall."

Now, as it turned out, you had the last laugh because when we got around to the regulations to implement the Clean Air Act, remote sensing was given the grand total of one tenth of one percent. Where was that number developed from? Do you have a recollection?

Mr. WILSON. As you know we have been working closely trying to keep you up to date——

Mr. BARTON. You certainly have been working more closely in the last 6 months than you were in the previous 5 years.

Mr. WILSON. Well, Mr. Chairman, I am not sure I agree with that. I think, as Ms. Nichols mentioned in her testimony, since 1990, EPA has either done or been involved in some 23 studies of the remote sensing area.

Mr. BARTON. Let's talk about that a little bit.

Mr. WILSON. Okay.

Mr. BARTON. How many dollars have been spent on those 23 studies?

Mr. WILSON. You mentioned that earlier. I don't have a number. We will be happy to put that together for you. Again——

Mr. BARTON. Do you think it is millions of dollars or tens of thousands or billions?

Mr. WILSON. Certainly tens of thousands. I don't know if it is millions. Again, what's important is there have been a lot of people working in this area, not only EPA but the auto industry and the oil industry and many States. I think we have tried to make sure that every study that makes sense to do on remote sensing, as that

technology develops, is done. In fact, that is one of the reasons we were so pleased to be able to include in the California agreement of about a year ago their agreement to do the first broad-based, communitywide study in Sacramento of how remote sensing works.

Mr. BARTON. Well, I don't want to mislead the committee or you or the other people in the audience, but this hasn't been something that I got up every morning and on my to-do list was do something for remote sensing. I mean, I have had a number of other issues that I have been involved with. But periodically, once every 3 or 4 months, I have tried to see how remote sensing was being developed and it is my judgment that the EPA until recently has done everything possible to discredit remote sensing. That is a judgment. I am not going to say that is a factual statement but it is a judgment and it is an informed judgment.

When we talk about the NO_x and Ms. Nichols has said in her testimony that remote sensing doesn't evaluate NO_x, I think that is a true statement. But it is also a true statement that EPA has spent—unless you have done something recently—no money, no dollars to try to develop the technology in remote sensing to evaluate NO_x. So it is kind of a synergistic argument.

I think it is irrefutable that if we have a tampering problem and there are studies to indicate that some people are not honest and will tamper with their vehicles, that if we have a tampering problem, one way to get around it is to use these remote senors as monitors. If for no other reason, the EPA should invest some time and some dollars in developing the NO_x standard so it can fairly evaluate it.

Do you agree with that?

Mr. WILSON. Yes, I do. I will check to see what work is being done on NO_x and if we find there are areas that aren't being worked on, I agree we should make sure that either we or somebody else is helping to develop the NO_x.

Mr. BARTON. Again, I don't want to abuse the prerogative of the Chair to beat a dead horse or to push a pet project, so to speak, but I do want a commitment that the EPA is going to fairly evaluate remote sensing and not continue to attempt to discredit it because it wasn't an idea that originated within the bowels of the EPA. Will you make that commitment today?

Mr. WILSON. I will certainly make that commitment, Mr. Chairman. I would add I think it is unfortunate, I don't believe we have ever been an opponent of remote sensing and we have tried to be a proponent. In fact, I think almost every State that is developing an I/M program has a remote sensing component to that program.

I have to say I think it is unfortunate that some, in selling the remote sensing idea have pushed it as the total solution to air quality problems or replacement for I/M in general.

Mr. BARTON. Which I have never done.

Mr. WILSON. I understand, Mr. Chairman. But I think in our responding to some of those points, at times we appear to be negative to remote sensing because we say it can't be a full replacement to I/M. And while we have tried carefully to follow that up with a comment about all the many things it can do to contribute to air pollution reductions and support of an I/M program, often those

comments get lost in the debate about is it the silver bullet that is going to solve all the air pollution problems.

Mr. WYDEN. Would the gentleman yield?

Mr. BARTON. I would be happy to yield.

Mr. WYDEN. And very briefly, because I think he knows, I want to work with him very closely on this.

At the same time I want to make it clear that I hope we don't get into a blame game kind of situation because it is clear that the State of California, for example, in not sending these results of what is acknowledged as the most comprehensive test to date, have been holding up the ability to get a credit——

Mr. BARTON. We passed the Clean Air Act in 1990. It is 1995. I respect the gentleman's good faith but it is a little disingenuous to now say in 1995 that certain things can't be done because of a study that was recently initiated when they had 4 years before that if they had wanted to.

Mr. WYDEN. If the gentleman would yield further, what I am concerned about and I think the gentleman's interest is, is getting that credits policy in place. What EPA, it seems to me, has said today is they want to get that credits policy in place and that is what the gentleman I believe has worked for. If the State of California could get the study in, I think we will be off to the races and I look forward to working with the gentleman.

Mr. BARTON. My time has expired.

My final comment, Ms. Nichols, we didn't get as much into the decentralized testing credit issue as I thought we might. Based on the information that I have read, it doesn't appear to me that the EPA has got a justifiable base to say that these decentralized systems only get 50 percent credit.

Now, the response we have seen in writing is, well, that's really not 50 percent, they are only discounted 35 to 45 percent. The bottom line is if these decentralized tests show that they do work, they ought to be given full credit. I am not satisfied based on the record that EPA has substantiated a case for discounting those types of systems.

As Mr. Cox has pointed out, to use as your validation technique a model that doesn't appear to relate very well, even according to the EPA, to the real world, what was going to get 30 percent credit, show 30 percent reductions they are saying now maybe only 8 to 10 percent. This is not the end of the dialogue; this is the beginning. But this subcommittee will be back in touch with you and Mr. Wilson and other professional staff to continue this.

If we can emphasize one thing before you leave, we want the Clean Air Act to work. Just layman analysis indicates that inspection and maintenance should be a part of it because there are so many cars and trucks in our nonattainment areas. I mean, if we are going to have inspection and maintenance programs, let's design them that they work and let's validate them so that the credits that are given because of that is really there.

Mr. BILBRAY. Will the chairman yield?

Mr. BARTON. I would be happy to yield and then we are going to have to conclude.

Mr. BILBRAY. I just want to make sure that we are fair, too. I was very skeptical of remote sensing, Mr. Chairman, when I first

saw it. I don't believe in the silver bullet answers to many of our environmental problems. But I do worry about the prejudice that may be developed.

I think one of the things that was pointed out is that VOC is what we are using to do our cost analysis, is a major factor. And we say that looking at I/M. Then when we go over and, as the testimony points out, we look at remote sensing, we say, well, it is deficient in NO_x.

Well, the cost effectiveness numbers, the selling points for I/M are emphasizing on VOC and the bad news is that we probably underestimated the emission of evaporatives from perfectly maintained cars by probably 85 percent. The good news is VOC doesn't look now like as much a problem as we thought and we are going back to NO_x.

But my concern is you are sort of moving the scale. It was VOC to sell I/M but it was NO_x to knock remote sensing. I just want to make sure that we try to be fair and open-minded to the fact that things you and I may not have agreed with when it was first proposed darn well could be the answer that we don't know it all and this is a very dynamic situation. We have gone like the latest NOAA report showing that maybe VOC's are not as big a problem in public health as we thought and maybe we need to shift our goals totally toward NO_x. But we are not abandoning, you are not abandoning your I/M based on this number. I don't think we should abandon the remote sensing or downplay it because we need to make sure we have an even standard here.

Ms. NICHOLS. Mr. Bilbray, I agree with your comments completely. I think that the important thing is that we use the best information that we have and that we continually update that information and that we be open to getting that kind of information. I believe that has been a hallmark of Administrator Browner's record at EPA that we are determined to improve the database that we are working on and that is the reason behind the flexibility that we have been trying to incorporate into this system.

Mr. BILBRAY. Mr. Chairman, thank you very much. I just want to make sure that I keep that going. I think I brought it out in the testimony.

There is a fairness issue here for those citizens who are fulfilling the law today that just because it is easier for a bureaucracy to keep nailing on the law-abiding citizen, we have a moral obligation to take the time and make the effort, even if we have to reinvent the way government actions on those people that aren't——

Mr. BARTON. I think we need to let the panel excuse themselves. I do want to thank each of you for attending and we will be back in touch.

You all are excused.

We would like to have our second panel come forward. We have Mr. Doug Lawson, with the Desert Research Institute; Mr. Tom Austin, Senior Partner, Sierra Research, Incorporated; and, Mr. William Babirad, a Driveability Tech in Westminster, Colorado.

Would you all three gentleman please come forward? We want to welcome each of you three gentlemen to the subcommittee. I think h of you know that this is an investigative subcommittee and, such, it has the practice of taking testimony under oath.

Do any of you have objection to testifying under oath?

[Chorus of no's.]

Mr. BARTON. The Chair would also advise you that under the rules of the House and the rules of the committee, you are entitled to be advised by counsel. Do any of you so wish to be advised?

[Chorus of no's.]

Mr. BARTON. If not, then will you please stand up and raise your right hand?

[Witnesses sworn.]

Mr. BARTON. We would first like to hear from Mr. Babirad for 5 minutes, please.

TESTIMONY OF WILLIAM BABIRAD, DRIVEABILITY AND EMISSIONS MECHANIC, DENVER, CO; THOMAS C. AUSTIN, SENIOR PARTNER, SIERRA RESEARCH, INC.; AND, DOUGLAS R. LAWSON, DESERT RESEARCH INSTITUTE

Mr. BABIRAD. My name is William Babirad. I'm the Senior Driveability Technician and Emissions Mechanic at Empire Oldsmobile in Denver, Colorado. I have diagnosed and repaired all kinds of cars with the most difficult performance and emissions problems for 13 years. I'm here as a private citizen, at my own expense, to tell you about my experiences with the recently adopted centralized I/M240 emission test.

The program began on January 2 of this year. The I/M240 contractor is Envirotest. When I first heard about the I/M240 program, I was 100 percent in favor of it. It sounded to me and to other top mechanics like a great idea. There would be objective tests to accurately measure every car's exhaust emissions. When emissions controls failed, they would get spotted and repaired. The gross polluting cars would either get properly fixed, parked or junked.

Most important, the air and our beautiful Colorado mountain environment would get cleaner still and old people with emphysema and little kids with asthma would have fewer problems breathing. So I took the classes oriented with I/M240 testing.

Even with all my experience, I take all the training and get all I can get and read everything I can find to keep up with technology. It's been 20 years since all you needed to be a good mechanic was strength and hard work. Now you really need to know applied science. You have to read and understand difficult technical material on electronics, hydrocarbon chemistry and computer controls.

The course was really thorough, 120 hours, and intensive. When the class was almost over, we wanted to test a few cars on I/M240 equipment to see how difficult emission control failures would look on the trace. We connected the new emissions test equipment and older Bar 84 testers to the cars simultaneously. We knew measurements weren't directly comparable, like apples versus oranges, so we wanted to see the apples and oranges together.

Our test consisted of simulating failures in various sensors and actuators to standard diagnostic technique. We hoped to learn what a specific sensor or actuator failure would look like on the test results compared to Bar 84 results, which we already knew.

To our astonishment, the I/M240 didn't catch anything, while the old equipment spotted failures immediately. And to our surprise,

the I/M240 test sometimes showed just the opposite results from the Bar 84. We couldn't understand this. If we had been operating the equipment, we would have suspected we set it up wrong, but the State of Colorado people operated the I/M240 dynos.

We just couldn't get a car to fail, even when we disabled so many sensors that the engine could hardly run and was practically shaking itself out of the vehicle. Cars with black smoke, unburned fuel pouring out of the tailpipe passed the I/M240 without a single problem and failed the old test by huge numbers, nobody at the test facility could explain what was going on.

Marty Emgee, a Service Manager at Century Chevrolet in Broomfield, Colorado, knew a talk show host, Peter Boyles. Peter asked that we prepare some cars for a sting operation and see if the test was working as we were told. Again, we simulated normal emissions failures, like a fouled spark plug or a sensor disconnected, as prescribed in our State emissions book.

To our surprise, all cars passed the new so-called tough emissions program, but when retested under the old emissions program, 2 of the 3 vehicles failed. Peter broadcast a story and the citizen outcry was high. Envirotest and Colorado State officials denounced this as fraud. The Governor himself went on the radio defending the system.

They even threatened to arrest us for emissions tampering. Also, a week later, after the radio program, the EPA showed up at our facility, doing a thorough investigation of us and asking us to measure some things that we couldn't understand what they were even trying to obtain. But they never could explain satisfactorily how gross polluting cars were passing the I/M240 test, but failing our old emissions test.

The State ignored the questions we raised, but we knew gross polluting cars were passing the emissions test. After a few days, they admitted they had changed the emissions cutpoints to reduce the number of cars failed. We also saw the numbers of cars failing tests drop from approximately 24 percent on the old test to only 9 percent on the new, confirming the loosened toxic emissions standard.

In other words, in what was supposed to be an air quality control program, they allowed much increased emissions to prevent any more public outcry over the new I/M240 test. So we went to a meeting of the Colorado Air Advisory Board to offer suggestions to possibly fix the I/M240 program. Lynn Henressy, from Envirotest, conducted the meeting and cut us off every time we tried to raise questions or provide evidence.

We just wanted to come up with a good emission test to fix whatever wasn't working. We also wanted to find out about the people they hired to run the test, what kind of training did they have, who was going to certify them, and, particularly, how they were going to do visual inspections. We knew it takes a long time and a lot of emissions background to make these checks. We got no answers. We didn't even get to ask any more questions.

In the next days and weeks back in the shop, we started to see the other side of the coin. We got in customers' cars that had failed I/M240 test. Now, I know emissions system and I'm proud of

my trade and of my skill in my trade. I've been correctly diagnosing and repairing these vehicles for many years.

Many of these cars failed had nothing wrong with them at all. Every emission control sensor and actuator was working properly, just such cars don't pollute. I tested each of them with our equipment to be sure. Repeatedly, Envirotest told us the system software was correct and the I/M240 test was working properly.

But it's not. Only 2 weeks ago, a brand new 1995 Oldsmobile Aurora, our company's flagship car, with only a few thousand miles on it, supposedly failed. Everything on the car was working properly. Everything. I took it back to Envirotest's facility myself and had them retest it several times. It failed in one lane and passed in another lane, under Envirotest control the whole time. I made no repairs to that car at any time.

Just in my own work bay, I've seen 12 similar failures on cars that were working perfectly. The spokesman for Colorado Envirotest, Joe McKeehan, claims there can be no false failures with I/M240 equipment. I know otherwise.

At the same time, I've started to see emissions documents from other cars, passes and fails. If you know the kind of equipment on specific cars, you can tell whether they performed the visual inspection correctly just from the document. So far, out of 55, only 3 have been correct. Previously, a false failure or inaccurate visual inspection document was grounds for a possible 6-month suspension and hearing. Those laws are still in effect, but there has been no enforcement, no suspensions of Envirotest centers, despite the massive errors.

In 11 years as a licensed emissions inspector, I doubt that I saw more than 3 or 4 failures and inaccurate visual inspection documents during that entire period. Now I've seen dozens and dozens in under 3 months. Many times, the Department of Revenue has verified my observation.

We had another meeting with Michael O'Toole, of the Colorado Department of Health, and Tom Mercedes, of the Department of Revenue. Mr. O'Toole asked us not to talk to the media anymore, to just talk to him. We thought that was okay because we just wanted to get the system fixed. We showed them all the bad visual inspection certificates. Mr. O'Toole became very angry and told us that this was unimportant. On the other hand, Mr. Mercedes said the people who had these false failures should get their money back, but they still refused to enforce the law, even when it was clearly brought to their attention, nor did they give any reason for this.

Now, we've also seen repeated examples of destructive testing at the facilities—cars run with no cooling fans in front of them, crunching gears, burning clutch asbestos from operating the clutch improperly, Envirotest technicians who didn't know whether a car was front or rear-wheel drive or even how to open the hood.

We've put Colorado's air quality in the hands of inexperienced amateurs and an out-of-State multinational corporation and they're acting irresponsibly. The first rule of auto mechanics is if it ain't broke, don't fix it. We had an emissions program in Colorado that made dramatic improvements in the air quality. Last year, under the old system, there was not a single day that exceeded air quality

standards. Now we've replaced that system with a much more expensive system that passes polluting cars and fails perfectly clean ones.

I'd like to know why and my fellow citizens would like to know why.

Mr. BARTON. Thank you. We'll now hear from Mr. Austin.

TESTIMONY OF THOMAS C. AUSTIN

Mr. AUSTIN. I'm Tom Austin, Senior Partner with Sierra Research. My testimony today is focused on the California I/M pilot program, which was a multi-million dollar experiment to determine the best I/M test procedure and to determine whether remote sensing would be an effective way to identify high emission vehicles.

There were comments by earlier witnesses to the effect that the California data have not yet been thoroughly analyzed or quality checked. Others may be lagging behind us, but we have independently quality checked the data and analyzed all of it. We've come to two major findings based on our analysis of the California data.

First is that there are two different dynamometer tests and two different evaporative tests that are almost equally effective in an I/M lane. The enhanced I/M procedure recommended by EPA is capable of reducing emissions by 30 to 40 percent, depending on the pollutant.

The second major finding coming out of the California experiment is that remote sensing is relatively ineffective compared to enhanced I/M because it misses most of the high emission vehicles and it has a relatively high false failure rate.

There are several reasons why remote sensing did so poorly. First, it doesn't measure all pollutants. As has been discussed by previous witnesses, completely misses evaporative emissions and the capabilities of the technology to measure NO_x accurately and hydrocarbons even accurately is somewhat of a problem.

But there are a couple of other problems with remote sensing. One is that it only measures concentration and what contributes to air pollution is not just concentration, but the product of concentration and the volume of exhaust emissions. A remote sensor can see a vehicle with relatively high concentration during a mode when there is an extremely low exhaust flow rate, can tag the vehicle as a high emitter when, in fact, it does not significantly contribute to air pollution problems.

The biggest problem with remote sensing, though, is the assumption that any snapshot of the emissions of a vehicle as it drives by a sensor are representative of the average emissions of that vehicle. It's just not the case. Gasoline-fueled vehicles are very sensitive to their operating mode. From one second to the next, the emissions of the gasoline-fueled vehicle can vary by a factor of 100-to-1.

There are significantly higher emissions associated with vehicles that have defects, typically five times higher than clean vehicles, on the average, but there is still a big overlap in the instantaneous emissions of vehicles with defects and vehicles which have been properly maintained.

Because of this overlap, there is no one standard for instantaneous emissions that can separate defective vehicles from properly

maintained vehicles. This variability in the instantaneous emission measurements is why EPA wanted the States to use the I/M240 test procedure. The I/M240 procedure is a procedure that exposes the vehicle to a wide range of loads and speeds and the average emissions across this 240 second test are representative of average emissions of vehicles in customer service. Remote sensing doesn't determine the average emissions of the vehicles. It only gives you a snapshot.

Despite what you heard yesterday, I/M240 variability is a relatively small problem as long as the vehicles are driven consistently by one inspector and the next inspector. Most cars have very little change in I/M240 emissions until a defect occurs or until a defect is corrected. That's why the results of the California experiment are still valid, even though 2 to 3 months elapsed between the time of the remote sensing measurements and the time of the I/M240 measurements.

There is plenty of data to show that remote sensing is poorly correlated with average emissions in stop-and-go driving or I/M240 when the tests are conducted on the same day.

In summary, I'd like to reiterate that the California pilot project did confirm EPA's model predictions of the benefits of an enhanced I/M program, showing that reductions in the range of 30 to 40 percent can be achieved, and it showed that remote sensing can't possibly replace I/M and that the benefits would be limited to something in the neighborhood of 10 percent or less.

Thank you very much. I'd be pleased to answer any questions.

[The prepared statement of Thomas C. Austin follows:]

STATEMENT OF THOMAS C. AUSTIN, SENIOR PARTNER, SIERRA RESEARCH, INC.

I am Thomas C. Austin, a senior partner at Sierra Research, Inc., a firm that specializes in air pollution research and control. Sierra's clients include a broad range of government agencies, trade associations, and private companies for which the company provides both analytical and testing services. Sierra's experience in motor vehicle inspection and maintenance (I/M) includes both program design and evaluation. Our company assisted in the design of the decentralized I/M programs operating in the state of Alaska and the centralized program operating in Vancouver, British Columbia. We also assisted in the design and evaluation of the California I/M program during an eight-year period that the company served as the technical support contractor to the original California I/M Review Committee. We have also provided I/M-related analyses for the Office of Technology Assessment, the American Automobile Manufacturers Association, and the Western States Petroleum Association. We currently provide I/M-related support services to several state and local agencies as well as the U.S. Environmental Protection Agency. I have managed most of Sierra's I/M-related work for the last 14 years. Prior to that I served as Executive Officer of the California Air Resources Board (CARB) where I was directly involved in the evaluation of I/M programs. I was trained in mechanical and automotive engineering at the University of Michigan, where I did research in automotive emissions during the late 1960's.

My testimony today covers Sierra's recent analysis of data collected under the large-scale "pilot" I/M program recently completed in California.[1] One of the objectives of the California Pilot Program was to determine the extent to which the need for a centralized I/M program could be minimized through the deployment of a network of remote sensing devices (RSDs) intended to single out those vehicles with the highest emissions. We have analyzed the data to determine the extent to which RSDs were capable of identifying vehicles with excessive emissions caused by lack

[1] Most of the information presented in this testimony is based on a paper presented at the 16th North American Motor Vehicle Emissions Control Conference entitled, "The Effectiveness of IM240 Testing, ASM Testing, and Remote Sensing Based on the California I/M Pilot Project," by T.C. Austin and P.L. Heirigs, March 7, 1995.

of proper maintenance and other emissions-related defects. Our analysis also compares the effectiveness of RSDs to a more conventional I/M program involving dynamometer testing.

BACKGROUND—FINDINGS OF THE ORIGINAL CALIFORNIA I/M REVIEW COMMITTEE

Before going into our analysis of the data from the California Pilot Program, it would be useful for the Committee to have some background information. Two years ago, the original California I/M Review Committee[2] concluded that the state's "decentralized" I/M program (where both inspections and repairs are performed in state-licensed private garages) was achieving only about half of the emissions reductions that it should. Exhaust emissions reductions from the program were estimated at 20 percent for HC, 15 percent for CO, and 7 percent for NO_x. A detailed analysis of data from more than 1,000 [illegible] through the existing I/M program on an undercover basis showed that [illegible] -related defects that cannot be detected by the simple tailpipe test (e.g., [illegible] ed NO_x control devices) were being ignored by the inspectors. In about 18 [illegible] the cases, the test results for vehicles failing the tailpipe standards were [illegible] fied. To a large extent, these problems with testing quality were associated with [illegible] e inherent conflict of interest that exists when a mechanic is attempting to satisfy a customer who wants their vehicle to pass the test for the minimum cost.

In response to the shortcomings of the current program, the I/M Review Committee recommended that the state Legislature replace the current program with a "hybrid" I/M program under which vehicles would be initially tested at highly automated "centralized" inspection facilities, where the potential for falsification of test results would be negligible and the labor intensive visual and functional inspection procedures of the current program could be minimized through the use of a more sophisticated chassis dynamometer test. Under the proposed program, failing vehicles with extremely high emission levels or evidence of tampering would be returned to the centralized facility for reinspection after repair, while failing vehicles with less serious problems would be permitted to have reinspections performed at specially qualified private repair facilities.

During a series of hearings conducted by the I/M Review Committee in 1992 and 1993, a number of individuals appeared before the committee to argue that the new California I/M program should rely heavily on the use of remote sensing. However, data collected by CARB indicated that remote sensors would have a relatively high false failure rate and would be totally ineffective in identifying many types of emissions-related defects, such as evaporative emissions control system problems. The Review Committee concluded that only a limited scale remote sensing program to provide additional tampering deterrence was justified.

The recommendations of the original I/M Review Committee were attacked by an alliance of garage owners and advocates of using remote sensing devices instead of scheduled, periodic I/M programs. The garage owners claimed a change in California's current, decentralized program is unnecessary because, in their opinion, it already meets EPA's performance standard (based on reductions in idle emissions reported by test stations) and is more effective than a centralized program based on scheduled, periodic inspections would be effective because people would make their vehicles "clean for a day" to pass the test and then restore them to their previous, defective condition. Lukewarm support for the Review Committee's recommendations was provided by some environmental groups, while other environmental groups bought into the arguments of the proponents of remote sensing. EPA did not support the Review Committee's recommendations either because it objected to any retesting being done at private garages.

In the face of a sanctions threat from EPA, the Legislature eventually passed, and the Governor signed, a patchwork of bills that attempts to satisfy all of the conflicting points of view regarding the best way to ensure that vehicles have low emissions in customer service. Under the new legislation, the state is committed to adopt a program with a combination of centralized testing, decentralized testing, and remote sensing. Under the new program, the amount of centralized testing required depends on the results of a "Pilot Program" under which a large-scale remote sensing experiment would be conducted in Sacramento, California, and a large sample of vehicles would be recruited from customer service for testing using both the Federal Test Procedure (FTP) and a variety of short test procedures. The new legislation also reconstituted the I/M Review Committee, providing for the appointment of a

[2] The original California I/M Review Committee was made up of representatives of the California Air Resources Board (CARB) and local air pollution control districts.

new set of committee members and support staff, which includes several of the most vocal opponents to the recommendations of the original I/M Review Committee.

DESCRIPTION OF THE CALIFORNIA I/M PILOT PROGRAM

Simulated Centralized I/M Program.—The California I/M Pilot Program consists of two essentially separate programs, one based in Southern California and one based in Sacramento. Under the Southern California program, CARB randomly selected more than 600 vehicles due for an I/M test from Department of Motor Vehicles registration data. Each of the vehicles was tested in an "as received" condition at CARB's laboratory using two different dynamometer test procedures being considered for use in I/M programs (the "IM240" and the "ASM"). Most of the failing vehicles received a full test using the Federal Test Procedure (FTP), which provided an accurate measurement of their emissions during stop-and-go driving. Failing vehicles were repaired until they could pass the I/M test or until at least about $500 had been spent on repairs. At the completion of the repair work, another FTP test was conducted. The potential effect of I/M can then be determined by comparing the average FTP results for passing and failing vehicles before and after the repair work on the failing vehicles.

Remote Sensing Program.—The remote sensing portion of the Pilot Program was conducted in Sacramento, California, an area with approximately one million registered vehicles. This was the first effort to provide comprehensive coverage of a large metropolitan area with a network of RSDs and it therefore may provide important information regarding the extent to which RSD programs can be expected to obtain emissions data on vehicles registered in a particular area. Data collected during the Program represent the single largest source of information regarding the correlation between emissions in stop-and-go driving and "snapshot" emission measurements of vehicles in customer service. During the program, ten remote sensing vans were moved from location to location during a two-month period. The goal was to obtain emission readings on as many of the vehicles registered in the area as possible. Monitoring was done on both surface streets and freeway ramps. When there were more than two lanes flowing in one direction, a van was parked in a middle lane and traffic was diverted around both sides of the van (theoretically providing the opportunity to measure from more than one lane). Large orange warning signs were placed in the roadway to warn motorists of the lane blockage. There was no indication provided to motorists that the vans were measuring vehicle emissions.

Immediately following the remote sensing study, more than 2,500 randomly selected vehicles were recruited for dynamometer testing (using the IM240 procedure). Dynamometer test results were compared to the remote sensing test results when they were available.

PILOT PROGRAM RESULTS

Testing under the California I/M Pilot Program is now essentially complete; however, only limited analysis of the data has thus far been published. The I/M Review Committee is expected to publish its own analysis, drafted by outspoken opponents of periodic, centralized I/M programs who serve as support staff to the Review Committee. Sierra is assisting several clients with analysis of Pilot Program data, however the results and conclusions presented here were developed independently by Sierra staff and do not necessarily represent the views of any of Sierra's clients.

Benefits of Enhanced I/M.—As shown in Table 1, the dynamometer tests available for enhanced I/M programs are highly effective in identifying vehicles with excessive emissions. More than 90 percent of the vehicles with significant emissions defects can be identified using a quick 2–4 minute dynamometer test. Only 2 percent of the vehicles that fail the test can actually pass the FTP standards they were certified to meet.

Table 2 shows the emissions reductions achieved from the repair of vehicles that failed the Enhanced I/M dynamometer test.

Table 1
Effectiveness of Enhanced I/M Dynamometer Tests
(Results Shown are for 1981 and Later Models)

Failure Rate	False Failure Rate*	Excess Emissions Identified HC	CO	NOx
34%	2%	98%	97%	98%

* False failure rate is percent of vehicles failing Enhanced I/M test that meet FTP standards.

Table 2
Emissions Reductions From Enhanced I/M

Category	Emissions Reduction HC	CO	NOx
Failed Vehicles	49%	48%	41%
Whole Fleet	37%	32%	24%
Whole Fleet Plus Residual Effects of Previous I/M Cycles	43%	40%	27%

As shown in the table, emissions reductions of nearly 50 percent for HC and CO and more than 40 percent for NO_x were achieved on vehicles that failed the dynamometer test. Accounting for the difference in baseline emissions between passing and failing vehicles and the failure rate, the fleet-wide reduction in exhaust emissions associated with the repair of the failed vehicles is 37 percent for HC, 32 percent for CO, and 24 percent for NO_x. These are the benefits based on subjecting all vehicles to a single inspection cycle with very high repair quality. Emissions reductions would have been larger but 14 percent of the vehicles that failed an I/M test during the Pilot Program could not be repaired within the applicable repair cost ceiling. When these emissions reductions are added to the residual benefits of the current I/M program (which are estimated at about 7 percent for HC and CO and 3 percent for NO_x.

There was little information collected during the California I/M Pilot Program that addresses the difference in I/M benefits that might be expected for centralized and decentralized testing using dynamometer test procedures. In theory, the use of test procedures that correlate well with the FTP should reduce the dependence of the current I/M program on the performance of accurate underhood inspections. (The poor quality of underhood inspections is a clearly documented problem with the current I/M program in California.) However, there is a more fundamental problem associated with the inherent conflict of interest that exists when inspections are performed by individuals whose work is not being closely scrutinized and who are interested in satisfying their customers (who want their vehicle to pass the test). Based on an analysis of data collected during a 1992 evaluation of California's decentralized I/M program, it has been demonstrated[3] that the tailpipe emissions test results appear to be falsified in some way for approximately 18 percent of the vehicles that fail a properly conducted test. This is the fraction of undercover vehicles taken to randomly selected I/M stations in California for which the station reports emission results that are too low to be explained by test-to-test variability. It does not appear to be a coincidence that vehicles in this category also have significantly higher FTP emissions than other vehicles that pass the I/M test. Assuming a similar pattern of fraudulent testing occurs under a program using dynamometer testing, the benefits of fraudulent testing occurs under a program using dynamometer testing, the

[3] T.C. R.C. Austin, et al., "Analysis of Invalid Emission Testing in the California Smog Check Program," Sierra Research, Inc., Report No. SR94-04-01, April 27, 1994.

benefits of the program would be expected to drop from 43 percent to 25 percent for HC.

EFFECTIVENESS OF REMOTE SENSING

It has been demonstrated that RSDs can provide reasonably accurate estimates of instantaneous CO concentrations in the exhaust of vehicles driving along roadways. In addition, there have been numerous reports published by proponents of remote sensing indicating that the majority of emissions from vehicles in customer service are caused by less than 10 percent of the vehicle population. This has led many people to conclude that an inspection program based on remote sensing would be extremely effective in identifying vehicles in need of repair without the need to subject all vehicles to periodic inspections. The feasibility of this approach was addressed during the Sacramento portion of the California I/M Pilot Program.

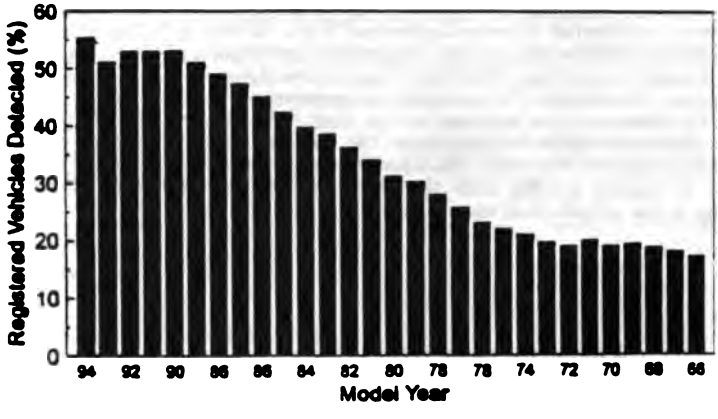
Table 3 summarizes the results of the RSD portion of the Pilot Program. As shown in the table, only about 10 percent of the excess emissions from vehicles registered in the Sacramento area were identified through the use of RSDs, even when the RSD cutpoints were set so low that more than half (58 percent) of the failing vehicles proved to be false failures.[4] There were two different problems contributing to the poor performance achieved from the remote sensing experiment. First, measurements were obtained on less than half of the vehicles registered in the Sacramento area.

Table 3
Effectiveness of Remote Sensing Test Procedures

Procedure	Failure Rate	False Failure Rate*	Excess Emissions Identified HC	CO	NOx
Remote Sensing	5%	58%	11%	10%	9%

* False failure rate is percent of vehicles failing RSD cutpoints that pass Enhanced I/M test.

FIGURE 1—PERCENTAGE OF VEHICLES DETECTED BY RSD'S IN THE SACRAMENTO PILOT PROGRAM (CALCULATED BY BAR)



[4] "Results based on defining RSD failure using 4 percent CO and 1000 ppm HC cutpoints and average of multiple readings, if available. Use of different failure criteria changes the balance between false failures and excess emissions identified; e.g., more false failures occur if failure criteria are changed to capture more excess emissions. See previously referenced paper for details.

In addition, as shown in Figure 1, the fraction of registered vehicles on which measurements could be obtained was a function of vehicle age. This is probably due to the lower rate of mileage accumulation for older vehicles; however, it may also be related to the pattern of use for older vehicles. A larger fraction of the travel for older vehicles may occur during peak commute hours when it is impractical to collect remote sensing data on multi-lane roadways.

The second problem observed with the remote sensing program was extremely poor correlation between the data recorded by RSDs and average emissions in stop-and-go driving, as measured by the IM240 test procedure.

While the remote sensing results may be in stark contrast with the projections that have been made by proponents of remote sensing, they are entirely consistent with previous analyses by CARB, EPA, and Sierra.[5] Although a number of superficially appealing analyses have been published that conclude remote sensing can be used to identify vehicles with excessive emissions, such analyses are based on implicit assumptions regarding vehicle emissions characteristics that are totally unrealistic. The fundamental flaw in essentially all analyses favorable to the use of RSDs is that the emissions measured by an RSD are representative of the average emissions for the particular vehicle being measured. Unfortunately, this is not the case. As reported by the University of Denver, "The basic finding . . . is that a small minority (8.2 percent) of the vehicles is responsible for fifty percent of the carbon monoxide emissions."[6] This conclusion was based on the assumption that the RSD measurements accurately compare the emissions of one vehicle to another. In fact, 10 percent of the operation of any vehicle is responsible for a disproportionately large fraction of the total emissions from that vehicle (and it is not just "off-cycle" operational modes (e.g., very high acceleration rates) that causes this effect).

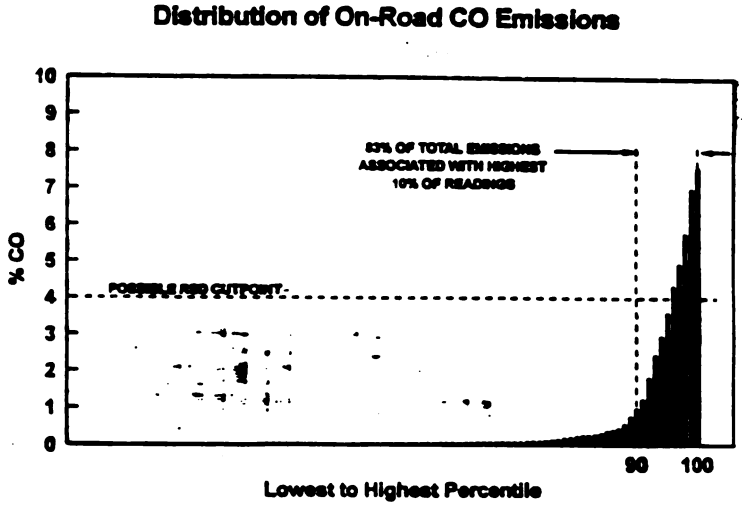
The problems introduced by vehicle emissions variability can be illustrated with a hypothetical example. If each vehicle on the road emitted 1 g/mi 90 percent of the time and 9 g/mi 10 percent of the time, and if the emissions mode at any instant was random, then, based on instantaneous measurements of a large sample of cars driving past a particular point it would appear that 10 percent of the vehicles were emitting 50 percent of the emissions. In fact, all of the vehicles would be contributing equally to the total emissions occurring in the area. Obviously, there are significant differences between the average emissions of vehicles in customer service. However, this hypothetical example illustrates why the distribution of emissions in the vehicle fleet cannot be accurately constructed from an analysis of data collected by remote sensors. Virtually all cars, even when perfectly maintained, are capable of generating carbon monoxide emissions that vary over a wide range.

Figure 2 shows the distribution of emissions recorded during the operation of a 1991 Chevrolet Lumina over a typical commuting route in Sacramento. Using an onboard emissions measurement system, the tailpipe emission concentrations of the vehicle were recorded on a second-by-second basis. As shown in the figure, the highest 10 percent of the readings were responsible for 83 percent of the total emissions. Unless it was known that all of the data in the figure came from one vehicle, it would appear that most of the emissions occurring in customer service are caused by only 10 percent of the vehicles on the road. This is precisely the problem with many analyses of remote sensing data. The assumption is made that the instantaneous measurements represent the average emissions for each vehicle. As a result, analyses of remote sensing data that draw conclusions about the distribution of emissions in the vehicle fleet are nonsense.

[5] T.C. Austin, et al., "Analysis of the Effectiveness and Cost-Effectiveness of Remote Sensing Devices," Sierra Research, Inc., Report No. SR94-05-05, May 18, 1994.

[6] D.H. Stedman and G.A. Bishop, "An Analysis of On-Road Remote Sensing as a Tool for Automobile Emissions Control," University of Denver, March 1990.

Figure 2



Another factor commonly ignored in analyses of remote sensing test results is that vehicles are not designed or certified to meet concentration-based emission standards. The contribution of exhaust volume, which yields mass emissions (g/sec or g/mi). RSDs can only determine emissions concentration. As a result, vehicles with low fuel consumption will appear to have relatively high emissions compared to vehicles with relatively high fuel consumption. Because the range of fuel economy for vehicles in the existing fleet exceeds 4.1, a fuel efficient subcompact car emitting 4 percent CO can have exactly the same gram/mile emission rate as a heavier car with a big engine emitting 1 percent CO. Because the range of light duty fuel economy is so large, a concentration-based standard will be either too strict for smaller, more fuel efficient vehicles, or too lax for larger, less fuel efficient vehicles.

COMPARING THE EFFECTIVENESS OF ENHANCED I/M AND RSD'S

Tables 4 and 5 summarize the results obtained during the California Pilot Program for Enhanced I/M and remote sensing. As shown in Table 4, Enhanced I/M programs are capable of identifying more than 90 percent of the excessive emissions that exist in the vehicle fleet. In contrast, remote sensing can detect only about 10 percent of the excessive emissions. In addition, to identify even 10 percent of the excessive emissions with remote sensing, over half of the vehicles identified as potentially defective will actually have nothing wrong with them.

Table 4
Comparison of Enhanced I/M and Remote Sensing Test Procedures

Procedure	Failure Rate	False Failure Rate	Excess Emissions Identified HC	CO	NOx
Enhanced I/M	34%	2%	98%	97%	98%
Remote Sensing	5%	58%	11%	10%	9%

As shown in Table 5, the reduction in fleetwide emissions possible with the use of remote sensing is small relative to the reduction in emissions possible with an Enhanced I/M program.

Table 5
Comparison of Enhanced I/M and Remote Sensing Emissions Reductions

Procedure	Emissions Reduction HC	CO	NOx
Enhanced I/M	43%	40%	27%
Remote Sensing	5%	5%	3%

CONCLUSIONS

Based on the analysis Sierra has thus far completed of the California I/M Pilot Program, several conclusions can be drawn:

1. The potential exhaust emissions reductions associated with the proper repair of vehicles failing Enhanced I/M test procedures are much larger than have been achieved under California's current, decentralized I/M program. For vehicles subject to a centralized, Enhanced I/M program, average exhaust emission reductions are estimated at 43 percent for HC, 40 percent for CO, and 27 percent for NO_x.)
2. Because underhood inspection quality is a problem under California's current program, there is some potential for Enhanced I/M tests to increase the emissions reductions achieved for Enhanced I/M tests to increase the emissions reductions achieved under the decentralized program; however, falsified test results appear to be a significant problem under the decentralized program thet would not necessarily be affected by the use of more sophisticated testing procedures. It is estimated that the falsification of test results that occurs in the decentralized program reduces HC emission reductions from 43 percent to 25 percent.
3. Only about 10 percent of the excessive HC and CO emissions in the fleet are identified with a remote sensing program involving 500 van-days of testing in an area with about one million population. Over half of the vehicles failing an RSD test are expected to be false failures. While the presence of a remote sensing program is expected to have some deterrent effect on tampering, it is clear that the technology is incapable of detecting the most common forms of tampering, prone to a high rate of false failures, and unable to identify most of the excess emissions that exist in the fleet even using cutpoints that yield a relative high false failure rate.

Mr. BARTON. Thank you very much. Dr. Lawson.

TESTIMONY OF DOUGLAS R. LAWSON

Mr. LAWSON. Thank you and good afternoon, members of the committee. For the record, my name is Doug Lawson. I am from Desert Research Institute in Reno, Nevada, but I am here today as a private citizen. I have no vested interest in I/M programs. I am not an opponent of any type of I/M program, either. But I am interested in obtaining clean air at the lowest cost for us as citizens.

First, let me mention new cars are about 95 percent cleaner today than they were 30 years ago, but we still have many urban areas that exceed the standards for ozone, particles, carbon monoxide. Why? In-use emissions from mobile sources are much higher than we expected. We have three supporting pieces of evidence for that.

First, in 1987, I was responsible for a major pollution study in California where one of the particular studies was a tunnel study. In that particular study, the observations were that Mobile source emissions were, for hydrocarbons, about four times higher than model predictions; not just 50 percent, but four times higher; and,

also, carbon monoxide was about three times higher than model predictions. NO_x was slightly higher than model predictions.

Second, top-down comparisons of what we observe in the air versus the ambient inventories show major discrepancies in urban areas, and this has been clearly documented. And, third, air quality simulation modeling by the various agencies and university research groups throughout the country have shown that those models cannot predict ozone unless mobile source emissions are increased by a factor of three to four as input in the inventory to those models.

So all these independent studies clearly demonstrate that the models are not capable of producing the emissions that we observe in real world. Mobile source models have been conclusively shown to under-predict in-use emissions. They have never been validated by the agencies. And any attempt to compare these output results with real world data, they fail miserably. When we encounter reality rather than simulate it, we see big differences between reality and the models.

Next, after that study was done, with the tunnel study and the top-down comparisons that we made of ambient data versus inventory, we began a methodical approach to understand why we were getting such big differences between the observed data and the models. That led us to looking at tampering surveys that have been done in California and throughout the country.

I learned back in 1989 that these studies were being done for collecting data at random by motorists who will volunteer to be stopped and given a roadside inspection. These roadside inspections consist of emission tests and tampering inspections. I acquired these data in order to see what their end-use of real world data tell us. First, if we could look at the first slide, these are results of tampering surveys conducted in 3 consecutive years in California.

The 1989 survey was done in I/M locations in the State. There were more than 4,000 cars stopped. That's the first line. The under-hood failure rate or tampering rates was 25 percent. The overall failure rate of cars stopped in that survey was 42 percent. If you look at the 1990 survey, it was done in non-I/M parts of the State of California. What we observed there, with the 2,300 cars that were stopped at random, was that the failure rate for tampering was 23 percent and the overall failure rate was 35 percent.

In other words, the under-hood failure rates and emission rates were lower in the non-I/M areas than they were in the I/M areas. Then we looked at data from 1991. There were about 2,500 cars stopped at random. We observed an under-hood failure rate of 23 percent and an overall failure rate of 38 percent. We see essentially no effects of I/M in California in spite of the fact that the models tell us that we're getting about a 20 percent reduction in hydrocarbons, another piece of evidence models don't work.

But California is not unique. Let's go look at the next slide here. These are data collected from EPA's national tampering surveys collected nationwide. This data set consists of about 44,000 vehicles stopped between 1985 and 1990. What we have here in this graph is a plot of model years of vehicles and odometer readings of those cars. I apologize for the small numbers and things on the graphs, but you'll be able to get the point here.

The first line is data from cars of 1985 and newer model year vehicles. That's the top line. The second line is model year vehicles 1980 to 1984. The bottom line is model year vehicles 1975 through 1979. So we've taken all of the vehicles and put them in the model year grouping for which they were stopped on these roadside surveys.

The next thing we did then is we categorized the vehicles by their odometer readings, going from zero to 25,000 miles in the left column, 25 to 50,000 miles in the second column, and clear over to the righthand column which has odometer readings greater than 100,000 miles.

Now, within each panel or pane on this graph, we have three separate letters that you see, an N, a D and a C. The C represents vehicles that were stopped that were centralized I/M vehicle cars. The D represents vehicles that were stopped as part of decentralized programs. The N is vehicles that were stopped that were not part of any I/M program area.

Let's now review this graph. The top line is the newest cars, the middle line is intermediate technology, bottom line is the oldest cars. The newest cars, as far as odometer readings, are in the left column. The oldest cars are in the right column as far as odometer readings. Within each panel, you can see the difference between centralized, decentralized and no I/M program vehicles.

What we observe as we move from left to right, the tampering rates or broken vehicle rates, as we should call them, which is the sum of tampering, arguably tampering and malfunctioning vehicles, we see that tampering rates generally increase as we move to the right. We also see that tampering rates have increased as we move down in the chart.

This chart explains perfectly why air quality has improved over the past years. That is the older vehicles, the higher, the easily tamperable vehicles are disappearing from the roads. It has nothing to do with I/M, however. What you observe here is that the centralized and decentralized broken failure rates are nearly identical across the board. Some places, centralized is a bit better than decentralized. Some panels show that decentralized is a bit better than centralized.

More remarkably, there is relatively little difference between those program types and vehicles and no program at all. Again, these are real world data, 44,000 vehicles stopped at random throughout the country.

So what we see, then, is that the real world data show that no I/M program type to date has been very effective, in spite of what the models tell us. Again, just to repeat and summarize, the models have never been validated. They have not been shown to be credible or reliable. In every attempt to date, when we have compared urban conditions of urban fleet and emissions with the real world or with the model, the model has severely under-predicted mobile source emissions.

And, finally, we have learned, then, through these data that there is no basis, in fact, for EPA's 50 percent discount that's allowed for different types of programs. The data just don't support it.

Thank you.

[The prepared statement of Douglas R. Lawson follows:]

STATEMENT OF DOUGLAS R. LAWSON

Good morning, Mr. Chairman and members of the Committee. For the record, my name is Douglas R. Lawson, and I am here as a private citizen. I have conducted research on air pollution for more than twenty years and am interested in obtaining clean air at the lowest cost. I am here today to summarize the research I have conducted for the past several years on the effectiveness of motor vehicle inspection/maintenance programs. My presentation this morning consists of the following components: a statement of the problem; the use of mobile source emissions models; a summary of mobile source emission characteristics; real-world observations of I/M program effectiveness; the repair component of I/M programs; a summary of the test component of I/M programs; and conclusions

1.0 STATEMENT OF THE PROBLEM

Since the mid-1960's we have made significant strides in cleaning our air. Air quality has improved, even though growth in the number of vehicles on the road and the miles they are driven has increased substantially. However, despite thirty years of increasingly stringent new car certification standards, about 90 cities in the United States exceed the national ambient air quality standard for ozone, which is one of the major components of urban smog. Ozone is not directly emitted by pollution sources, but it is formed through a complex series of reactions in the atmosphere involving hydrocarbons, nitrogen oxides and sunlight. In the past few years, we have shown in urban locations that mobile sources are the major contributor to ozone. The ozone of which I am speaking can be called "ground level" ozone, and it is responsible for health effects to people and damage to crops and forests. This "ground level," or bad, ozone is not to be confused with upper air or "good" ozone which serves to protect the Earth from the harmful components of solar radiation.

Carbon monoxide is an air pollutant that comes almost exclusively from motor vehicles, and it is also responsible for human health effects. In 1994, 11 urban locations in the U.S. were in violation of the air quality standard for carbon monoxide. Our recent research has also shown that high-emitting motor vehicles are also responsible for a number of toxic pollutants, such as benzene and tiny airborne particles, such as the kind you see from smoking vehicles.

Since 1966, motor vehicle manufacturers have reduced the emissions of new vehicles by about 95 percent, but our air quality has not improved by that amount. Why is it that we still have air in many urban areas that is not meeting the standards? I believe the major reason is that inspection/maintenance (I/M) programs have not functioned as the models have predicted, and I will present data today that support this hypothesis.

Inspection/maintenance programs are designed to ensure that motor vehicle emission control systems are functioning properly throughout the lifetime of the vehicle. Two major I/M program types have been carried out in the United States: centralized (generally run by a single contractor, where the test is separated from the repair); and decentralized (where the inspections are carried out by private garages, and generally the tests and repairs are performed at the same location). Some I/M programs require an annual test; others a biennial test; some require testing upon change of ownership. Some programs require emissions testing only; others require inspections for tampering only (where the emission control system components may be missing, modified or disconnected), and others require testing for both emissions and tampering.

2.0 THE MODEL

In 1987 I was responsible for organizing and coordinating the largest urban air pollution study in the United States. It was carried out in Los Angeles, the nation's "Smog Capital". This $14 million study had a number of government and private sector sponsors and was the first collaborative air pollution study of its kind. One of the projects in that study was sponsored by the motor vehicle and petroleum industries, and it showed that the hydrocarbon emissions of motor vehicles driving through a tunnel were about four times higher than model predictions and that carbon monoxide emissions were about three times higher than model predictions. Nitrogen oxide emissions were slightly higher than the model predicted. These surprising results prempted several additional studies, which independently confirmed the tunnel study observations.

Why were these results so significant? They demonstrated that the models used to predict mobile source emissions were inadequate, and that they greatly underesti-

mated the influence of motor vehicles on our cities' air quality. These models are used to construct motor vehicle emission inventories, which are used by government agencies and others te design air quality strategies for reducing air pollution. Our work and the research of others since 1987 has demonstrated that the current inventories severely underpredict the dominating influence of motor vehicle emissions on urban air quality. With erroneous emission inventories, regulatory agencies will design costly programs thet produce only marginal improvements in air quality.

The mobile source emission models also are used to predict the effect of inspection/maintenance programs on reducing emissions. However, none of the models have been demonstrated to be accurate, and when they have been compared with real-world data they have been shown to greatly underpredict vehicle emissions and overestimate the effects of I/M programs. Therefore, it does not appear that the current generation of models should be relied upon as the sole basis for designing pollution control strategies.

3.0 MOBILE SOURCE EMISSION CHARACTERISTICS

Twelve years ago, in 1983, a contractor reported to the state air pollution agency in California that 12 percent of the vehicles were responsible for nearly half of the carbon monoxide pollution. That consultant recommended that the agency study the characteristics of those high-emitting vehicles because they were responsible for such a large portion of the fleet's emissions. That recommendation remained unnoticed until the tunnel study and other real-world observations demonstrated that clearly half of the motor vehicle fleet's tailpipe carbon monoxide and hydrocarbon emission readings, when the vehicles are in warm and stable operating conditions, come from only ten percent of the fleet. We have also learned that the highest emitters come from all model years, and that relatively little pollution comes from old vehicles because they tend to be driven relatively little compared with the newer cars. This tremendously skewed emissions distribution has important control strategy implications: If those high emitters can be identified and repaired, tremendous strides can be made toward improving our nation's air quality. This is what I/M programs are supposed to do.

4.0 REAL-WORLD VEHICLE DATA

In 1989 I was responsible for a study sponsored by the California Air Resources Board in the Los Angeles area where we used a remote sensing device with the help of the California Highway Patrol to pull over a number of high-emitting vehicles for inspection. We found that more than 90 percent of the stopped vehicles failed an I/M test when it was administered to those high emitters. This study showed that when a remote sensing device is used to identify high-emitting vehicles, it can do so with greater than 90 percent accuracy. Another study I coordinated in 1991 demonstrated good correlation between remote sensing readings and other emissions tests, including the IM240 test, when the cars were given these tests on the same day. These studies also demonstrated that the remote sensors provided accurate readings for carbon monoxide and hydrocarbons. We also observed that California's I/M program, called Smog Check, did not seem to have any effect in reducing the pollution coming from those high-emitting vehicles.

In the 1989 study I also learned that the State of California and the U.S. Environmental Protection Agency had been conducting voluntary roadside tampering surveys for several years. In those surveys, the agencies collected data from vehicles as they were stopped for an unannounced roadside inspection, where an emissions test and an underhood inspection were given for tampered or broken emission control system components. These data have been used by the agencies to examine tampering rates in vehicles, to examine tronds in vehicle operating conditions, and to evaluate the effectiveness of different I/M programs.

California Tampering Surveys

We first obtained the data collected in California's voluntary tampering surveys and discoverod some interesting results. We found that the overall tampering and emission failure rates were nearly identical in portions of the State that had the Smog Check program and portions of the State that did not. We examined the data from more than 11,000 vehicles stopped at random over a several-year period and could find no observable effect of the Smog Check program on roducing vehicle emissions. We also observed that the vehicles' emissions were clean for the test, as shown by the State's Smog Check records for those vehicles, but that their average emissions were much higher on all other days.

What does this mean? Although we must go on record to say that we believe that California's Smog Check program must do something, we cannot observe its effect,

in spite of annual program costs of nearly one-half billion dollars to California's citizens. Our hypothesis is that the failure of the program to achieve the results as predicted by the model (the model predicts that the current program is reducing emissions from vehicles by 18 percent for hydrocarbons, 15 percent for carbon monoxide, and 7 percent for oxides of nitrogen) is due mostly to human behavior and motorists' desires to "pass the test".

California's experience is not unique, however.

EPA National Tampering Surveys

We also obtained data from EPA's national voluntary tampering surveys, which consist of 60,000 vehicles stopped on the road in many U.S. locations between 1985 and 1992. This valuable survey, which is the most effective way to evaluate the effectiveness of I/M programs, was discontinued in 1992. With this data set, we compared the effectiveness of different I/M program types from throughout the country. We took special care to adjust the vehicle populations for year of manufacture and number of miles driven. Our observation is that vehicles in centralized I/M program arms have slightly lower tampering rates only some of the time, when compared with decentralized I/M program areas, but not always. As you recall, tampering of the vehicle's emission control system, whether done intentionally or through neglect, does lead to higher emissions. What is even more surprising is that neither program type was much better than no program at all as far as tampering was concerned.

Meanwhile, EPA, on the basis of its model, discounts the benefit of an I/M program by 50 percent if the program is decentralized. The real-world data show that there is little, if any, real-world basis for the benefit itself, much less for the 50 percent discount on it.

5.0 "M" PORTION OF I/M

How good is the repair portion of I/M programs? In 1991 the California Air Resources Board recruited a group of about 1,100 vehicles which previously had failed the Smog Check inspection. These vehicles were sent to randomly selected Smog Check stations in the Los Angeles area for undercover inspections and repairs. What we learned from this study really surprised us. We found that only a few of the vehicles in this data set were high emitters, and that the majority were only "marginal" emitters. Most people had previously thought that all failing vehicles were high emitters. Furthermore, we discovered that half of the "marginal" emitters had *increased* emissions after repairs. We do not know all the reasons why this happened; the study was not designed to answer that question. Most of the emphasis in today's I/M debates is on the type of test and how it should be performed. More information is required for the most important component of I/M programs—the repair component.

6.0 THE "TEST"

As we stated previously, much of the current debate in the I/M arena centers on the type of emissions test to be used in I/M programs. In the 1990 amendments to the Clean Air Act, the EPA originally mandated the use of a type of treadmill test for cars called an IM240 test, because it lasts 240 seconds. The EPA has recently modified their requirements somewhat; they may explain those changes to you in these hearings.

During the past year, the California Air Resources Board carried out a pilot study to understand which type of emissions test would be most effective in helping technicians diagnose and repair vehicles. We have compared the results from several different types of emission tests from that study, and we observe relatively little difference among those test types in measuring hydrocarbon, carbon monoxide and nitrogen oxides emissions.

7.0 CONCLUSIONS

Although we have made good progress in reducing air pollution in the United States during the past 30 years, we still are not in attainment of the national ambient air quality standards. In a series of independent experiments and analyses over the past eight years, several research groups throughout the country have demonstrated that in-use emissions from mobile sources in urban locations are much higher than the emission models predict. When we have made comparisons of mobile source emission models and emission inventories with real-world observations, we observe that the models do not agree at all with real-world data. These findings suggest that the models are not reliable for predicting emissions from mobile sources.

Several independent groups also have shown that when motor vehicles are in stable and warm operating conditions, a majority of their emissions come from just a small percentage of those vehicles. This small group of high emitters spans all model years; little pollution comes from the oldest vehicles.

This phenomenon has led us to our examination of current I/M program data. We have examined data from more than 70,000 vehicles that have been stopped at random throughout the United States, and we see that the different I/M program types have not been very successful in reducing vehicle emissions. We have analyzed motor vehicle emissions and tampering rates in decentralized, centralized and non-I/M program areas and, although we believe I/M programs *must be doing something*, we are able to observe only minor effects of I/M programs, regardless of the program type. This observation shows that the 50 percent credit allowed by EPA in its emissions model for centralized I/M programs is not justified or correct.

Our hypothesis is that the major factor in this failure of I/M programs appears to be from human behavior and motorists' desires to cheat and to "Pass the test". We also have observed that the test type and mode of testing do not seem to be the most important issues in dealing with the success of I/M programs—new programs that take account of the realities in human behavior must be designed. With promising new technologies available to us, such as remote sensing, we can quickly identify high-emitting vehicles, get them to repair facilities for prompt diagnosis and repairs, and then follow up on those repairs with in-use surveillance methods. We also recommend the acquisition of real-world data from roadside surveys, remote sensing, and tunnel studies in order to monitor I/M program effectiveness and to provide for rapid changes to the programs if necessary and less reliance upon mobile source emission models until they can independently be shown to be credible, accurate and reliable.

Mr. BARTON. Thank you, Mr. Lawson. And, Mr. Austin, you did testify.

Mr. AUSTIN. Yes.

Mr. BARTON. It's kind of interesting. We're going to ask you questions and neither one of us heard what you said. First, let me welcome each of you all three, especially you, Mr. Austin. I almost thought Mr. Waxman and you were related in some way because he was such a fan of yours to be able to testify. Unfortunately, he can't be here for your testimony, but we're glad to have you.

I'd like to ask Mr. Babirad what you think the cause of the problem is in Colorado with the I/M240 equipment. Do you think the equipment itself is flawed or the people that are using it are improperly trained?

Mr. BABIRAD. Well, the first thing that we have to understand is that the process of an I/M240 is a very technical machine and when you do these studies and all this stuff that these people are bringing forward, these people that are driving these are highly skilled people. They're either technicians or engineers.

If you take a look in the Federal Test Procedure, they don't have people that have worked flipping burgers one day and then they come in and operate this equipment the next. So the emissions output that is on an I/M240 is directly related to how it is driven on the trace. So the person has to be very specific.

For example, if he operates or feathers the accelerator peddle, he's going to get a false failure. So all these things are brought into account of how it is driven on the trace. But sometimes that does not directly affect how or show how the car is driven on the road. If the person doesn't drive that way, the car doesn't pollute that way. A lot of times, what we have seen is when the dynamometer is set up wrong and the load is too much for the car, the person is under wide open throttle, which means he has his foot down three-quarters or more on the floor while he's on the trace.

Every car in production, when it is under these conditions, it's called enrichment and when it's under enrichment, it ignores the sensor, which is the oxygen sensor in the exhaust stream for feedback to say how do I need to adjust it. To get the power out of the car, you're going to be a polluter for that short timeframe.

Mr. BARTON. In my understanding of an I/M240 test, they put it up on a treadmill.

Mr. BABIRAD. That's correct.

Mr. BARTON. And then the owner doesn't drive the car, a technician.

Mr. BABIRAD. Supposedly a technician, that's correct.

Mr. BARTON. They don't drive the car, but I mean they put the car through a standard series of acceleration and decelerations in a given time period. Is that correct?

Mr. BABIRAD. That's correct.

Mr. BARTON. And what you're saying is that you don't think the people that are in the car know how to do the test.

Mr. BABIRAD. That's correct. In fact, the simplest of an emissions inspection is the visual inspection of the vehicle; what kind of components does it have and are they there and do they appear to be working. On all these documents here, on every single one of them, some of these vehicles that have been ran through have every single emissions device off of them. In fact, the brackets that held these devices are still on the vehicle.

So what it takes is that it takes actually years of education, of experience, to work from this model to that model, division to division, or manufacturer to manufacturer. There are so many of these things out there that you really have to be out in the field for quite some time to be able to identify the components it's supposed to have. And when you look at it, you have to know what it is. And these people absolutely—I have been to these test centers myself.

Take this 1995, for example, it's an Aurora. I don't believe that a vehicle, without even looking at it, in 5,000 miles, it has something wrong with. Although it could have. Anything is possible in this industry. What happened is with this particular car, I took it there myself after a consumer had brought it in for a failure. I had them run it twice on the dyno while I was there and it failed in one lane two times. All we did was move it from one lane to another and all of a sudden it fast-passed, which means now it only had to run 30 seconds.

Mr. BARTON. I need to ask some other questions of the other two gentlemen, but do you believe that I/M240 equipment can be used properly to identify polluters or do you think it's just hopeless?

Mr. BABIRAD. I think that it's hopeless on the basis that I don't think you're going to find the people to run it.

Mr. BARTON. I'm going to give myself one minute to at least ask you one question. We're going to have more than one round of questions. You've gone to quite a bit of time to try to document in the real world cars that pollute versus don't pollute in terms of age and whether they're in a centralized or decentralized test program and your data indicate that the centralized programs don't appear to have any noticeable positive impact on air quality.

Have you shown your data to EPA, what you just showed us?

Mr. LAWSON. Yes.

Mr. BARTON. And what is their response?

Mr. LAWSON. They had requested that we go back and do further analyses with the data. We've done that and our same conclusions hold.

Mr. BARTON. What is their reaction to the conclusion? Is your study, in their opinion, a flawed study, a flawed methodology? They appear to just totally discount the Minnesota study. They just don't want to accept it or what's the——

Mr. LAWSON. There has been no formal response, that I'm aware of, from EPA yet on that.

Mr. BARTON. Okay. Well, I'm going to recognize Mr. Wyden, but we're going to have an opportunity to ask all of you some further questions.

Mr. WYDEN. Thank you very much, Mr. Chairman. Mr. Chairman, before I begin my 5 minutes of questioning, I would like to make a procedural request on behalf of the minority.

Mr. BARTON. Without objection.

Mr. WYDEN. Thank you very much, Mr. Chairman. Mr. Chairman, the testimony of one of our witnesses today, Mr. Babirad, raises a number of specific and unverified allegations against the inspection and maintenance contractor and the State of Colorado and several Colorado State officials.

Moreover, unlike the other witnesses testifying in these hearings who are testifying on the merits of the inspection and maintenance system in general and the science that supports it, this witness has raised issues regarding the conduct of specific private parties and State officials.

Therefore, I believe that in the name of fundamental fairness and in order to provide a full and accurate hearing record for the subcommittee, that the private parties and State officials referenced in Mr. Babirad's prepared statement, as well as any others that may be discussed in response to any subsequent questioning of this witness, should be allowed to respond to the statements and allegations in writing and that those responses should be incorporated into the record of this hearing.

Otherwise, the testimony of this witness may be anecdotal, possibly misleading to the subcommittee. Mr. Chairman, therefore, I would ask unanimous consent that the parties referred to by this witness be allowed to respond in sworn written statements and that their responses be included in the record of this hearing.

Mr. BARTON. Without objection, with the understanding that any such affidavits or written responses shall also be given under oath so that they're playing under the same groundrules.

Mr. WYDEN. That is exactly what the minority is requesting and we appreciate that.

Mr. BARTON. Without objection, so ordered.

Mr. WYDEN. Thank you, Mr. Chairman. Then to begin my questioning, if I might, for you, Mr. Babirad. In your testimony, you stated that false testing results was grounds for suspension. Is that correct?

Mr. BABIRAD. That is correct.

Mr. WYDEN. How big a problem, in your view, is false testing at decentralized repair and inspection shops?

Mr. BABIRAD. I'm sorry, sir. Could you say that again?

Mr. WYDEN. How big a problem, in your view, is false testing at decentralized repair and inspection shops?

Mr. BABIRAD. It's out there and I don't believe that in any system that it will not be there in some respect. It has been. I myself have brought it to the State government several times when we have found such people that are perpetrating taking money to get cars through. So I have seen it for money reasons with decentralized, yes.

Mr. WYDEN. Were you aware that Empire Oldsmobile, your current employer, was placed on probation in 1985 and 1986 by the State of Colorado for issuing a pass certificate to a vehicle that did not pass as part of Colorado's oversight of the inspection program?

Mr. BABIRAD. No, sir. In 1985, I did not work for Empire Oldsmobile.

Mr. WYDEN. We were interested in knowing when you started work there and appreciate your saying that you were not aware that they were put on probation.

Mr. BABIRAD. I can say one thing. In the 11 years that I have had an emissions license, I have never been suspended.

Mr. WYDEN. We appreciate knowing that and that's why I asked about your employer and not about yourself. Now, it's my understanding that you and others supplied the State of Colorado with more than 30 examples of problems that you have encountered with Inspection and Maintenance-240, is that correct?

Mr. BABIRAD. That is correct.

Mr. WYDEN. Mr. Chairman, without objection, I would like to submit for the record the first nine responses by the State of Colorado to Mr. Babirad's concerns, as well as the probation agreement with Empire Oldsmobile.

Mr. BARTON. Without objection.

[The documents referred to follow:]

March 30, 1995

I/M 240 Inspection Procedures

Vehicle Description: 1992 Oldsmobile Bravada
VIN#: 1GHDT13W0N2707409
Mileage: 41,229
Date of Inspection: February 8, 1995

Rebuttal to Conclusion by Dept. of Health:

This vehicle had barely failed the I/M 240 test for HC by .322, but failed the Bar 90 standards 43 times the acceptable level. Passed CO standard on I/M 240, but failed 2.83 times on Bar 90 standards.

William Babirad

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Denver, Colorado 80222-1530
Phone (303) 692-2000

Laboratory Building
4210 E. 11th Avenue
Denver, Colorado 80220-3716
(303) 691-4700

Colorado Department
of Public Health
and Environment

I/M 240 INSPECTION PROCEDURES

Vehicle description: 1992 Oldsmobile

VIN: 1GHDT13W0N2707409

Milage: 41,229

Date of inspection: February 8, 1995

Reason of concern: The I/M 240 inspection that was performed on this vehicle indicates that the vehicle failed just over the standards.

The previous inspection procedure, (Bar 84 technology), indicates that the vehicle fails well over the previous standards.

Conclusion: Due to the "On Board Computer System" on this vehicle, the vehicle was trying to adjust itself while the vehicle was being driven, however this vehicle most likely has a problem that the computer system can not overcome causing the vehicle to still fail the I/M 240 inspection.

Due to the fact that this vehicle was not submitted for a "Vehicle Evaluation" at one of our Technical Centers, we are unable to identify the exact cause for this vehicle to fail the I/M 240 inspection.

00140400

VEHICLE INSPECTION REPORT

STATE OF COLORADO

RESULTS

Overall Results	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
FAIL	FAIL	PASS	PASS	PASS	PASS			24.25

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
1GHDT13WON2707409	CO	XXXX7409	1992	OLDS	41229

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70630	06	0012	15:31:33	15:49:20	08-FEB-199

CONSUMER INFORMATION

Your vehicle has failed to comply with required State regulations for emissions inspection. All items listed as failure must be addressed prior to your next inspection. See the box titled "IF YOUR VEHICLE FAILED THE INSPECTION" for further instructions. If your vehicle failed emissions see the box titled "POSSIBLE CAUSES FOR EMISSIONS FAILURE" for further instructions.

EMISSIONS TEST INFORMATION

	READINGS	LIMITS	RESULTS
HC GPM	4.332	4.0000	FAIL
CO GPM	16.8409	20.0000	PASS
CO2 GPM	482.9193		
NOx GPM	1.1125	6.0000	PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CAP RESULTS
UNITS	INCHES/H_2O	LITERS	
LIMITS			
READINGS	10.00		PAS
RESULTS	INACCESSIBLE	INACCESSIBLE	

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter - PASS
Fuel Filler Restrictor - PASS
Air Injection System - N/A
Oxygen Sensor - PASS
Check Engine Light PASS

Ran at 4.25% CO 2.83 X Standards
Ran at 9,552 HC 43 X Standards
Barely Failed HC PASS CO

IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER

Your vehicle inspection [illegible] on this "VEHICLE INSPECTION [illegible] registration by mail, follow the [illegible] located on the back side of [illegible] your registration in person, the [illegible] accompany all supporting [illegible] the Certificate of Emissions [illegible] red at the owner's/operator's

IF YOUR VEHICLE FAILED THE INSPECTION

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If your vehicle failed its first inspection, you are entitled to one free reinspection within 10 calendar days if returned to the same independent inspection station. If the first inspection was performed at an Enviotest center, the reinspection can be performed at any one of Enviotest's centers. The information recorded on the "VEHICLE INSPECTION REPORT" is extremely valuable to a repair technician when having your vehicle repaired. The "VEHICLE REPAIR FORM", (VRF), located on the back must be completed by the person performing the repairs. The VRF must also accompany the vehicle at the time of reinspection. If your vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility information is available at the inspection stations or by calling the Department of Revenue at (303) 572-5603.

POSSIBLE CAUSES FOR EMISSION FAILURE

HIGH HC READINGS	HIGH NOx READINGS
A. Defective points/electronic ignition B. Open plug wire or fouled spark plug C. Vacuum leak D. Incorrect air/fuel mixture E. Inoperative air pump F. Incorrect ignition timing	A. Inoperative EGR system B. Incorrect ignition timing C. Incorrect air/fuel mixture D. Low octane fuel rating E. High combustion temperature F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 1 FEE: 24.25 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 24.25 CHK: 0.00 CDT: 0.00 CPN: 0.00
[illegible]YL: 6 RMON: 02 RYR: 1995 TYP: LDGV GVW: NVW: 3939 DSP: 4.3 FUL: GA
[illegible] EA49 SMV: SMON:
[illegible]AK: OLDS MDL: BRAVADA VTY: P TRA: A DRV: A ABS: Y 2STK: N
TRC: N WB: 107.0 DEX: N ECH: N EYR:
EFAN:
INOX: 1.1125
URES: I TRVFY: FFA0
[illegible]060 80 219 9515 3 133 46999

Digitized by Google

March 30, 1995

I/M 240 Inspection Procedures

Vehicle Description: 1987 Mercury
VIN#: 1MEBM53U9HG665196
Mileage: 72,587
Date of Inspection: 1st January 17, 1995 2nd January 17, 1995

Rebuttal to Conclusion by Dept. of Health:

This vechile came in for a carbon monoxide (CO) failure and was simply sent back to the test facility with no repairs. Met fast pass criteria.

William Babirad

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director
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Denver, Colorado 80220-3716
(303) 691-4700

Colorado Department of Public Health and Environment

I/M 240 INSPECTION PROCEDURES

Vehicle description: 1987 Mercury

VIN: 1MEBM53U9HG665196

Milage: 72,587

Date of first inspection: January 17, 1995
Date of final inspection: January 17, 1995

Reason of concern: The I/M 240 inspection that was performed on this vehicle indicates that the vehicle failed due to excessive CO.

A repair facility indicated that the vehicle was/is operating properly and should pass the inspection.

Conclusion: The I/M 240 inspection that was performed on January 17, 1995 indicates that this vehicle fails due to excessive CO.

The vehicle returned for a reinspection on January 17, 1995. The vehicle passed the reinspection.

Due to the numerous sensors which provide information to the computer and control devices which are operated by the computer it is quite possible that an intermittent problem exists on this vehicle. If the vehicle is not inspected at its normal operating temperature, it may fail an I/M inspection also.

Due to the fact that this vehicle was not submitted for a "Vehicle Evaluation" at one of our Technical Centers, we are unable to verify if the vehicle is operating properly.

C0015909

VEHICLE INSPECTION REPORT

STATE OF COLORADO

RESULTS

Overall Result	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
FAIL	FAIL	PASS	PASS	PASS	PASS		N/A	24.25

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
1MERM53U9HG665196	CO	SAB4093	1987	MER	72587

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70318	06	0007	09:47:44	10:02:49	17-JAN-1995

CONSUMER INFORMATION

Your vehicle has failed to comply with required State regulations for emissions inspection. All items listed as failure must be addressed prior to your next inspection. See the box titled "IF YOUR VEHICLE FAILED THE INSPECTION" for further instructions. If your vehicle failed emissions see the box titled "POSSIBLE CAUSES FOR EMISSIONS FAILURE" for further instructions.

EMISSIONS TEST INFORMATION

		READINGS	LIMITS	RESULTS
HC GPM		1.2412	1.0000	PASS
CO GPM		48.3721	30.0000	FAIL
CO2 GPM		418.1185		
NOx GPM		0.9049	6.0000	PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CAP RESULTS
UNITS	INCHES/H_2O	INCHES	PASS
LIMITS	10.00		
READINGS			
RESULTS	INACCESSIBLE	INACCESSIBLE	

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter - PASS
Fuel Filler Restrictor - PASS
Air Injection System - PASS
Oxygen Sensor - PASS
Check Engine Light - PASS

No problem found with this Vehicle Sent Back out & Fast passed, No work done

ISSUED A WAIVER

a "VEHICLE INSPECTION
ion by mail, follow the
ted on the back side of
registration in person the
company all supporting
Certificate of Emissions
at the owner's/operator's

IF YOUR VEHICLE FAILED THE INSPECTION

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If your vehicle failed its first inspection, you are entitled to one free reinspection within 10 calendar days if returned to the same independent inspection station. If the first inspection was performed at an Enviротest center, the reinspection can be performed at any one of Enviротest's centers. The information recorded on this "VEHICLE INSPECTION REPORT" is extremely valuable to a repair technician when having your vehicle repaired. The "VEHICLE REPAIR FORM", (VRF), located on the back must be completed by the person performing the repairs. The VRF must also accompany the vehicle at the time of reinspection. If your vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility information is available at the inspection stations or by calling the Department of Revenue at (303) 572-5603.

POSSIBLE CAUSES FOR EMISSION FAILURE

	HIGH HC READINGS	HIGH NOx READINGS
yection ted	A Defective points/electronic ignition B Open plug wire or fouled spark plug C Vacuum leak D Incorrect air/fuel mixture E Inoperative air pump F Incorrect ignition timing	A Inoperative EGR system B Incorrect ignition timing C Incorrect air/fuel mixture D Low octane fuel rating E High combustion temperature F Excessive carbon deposits

OFFICIAL USE ONLY

TST: 1 FEE: 24.25 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 0.00 CHX: 0.00 CDT: 0.00 CPN: 24.25
6 RUON: 01 RYR: 1995 TYP: LDGV GVW: NVW: 3130 DSP: 3.0 FUL: GAS
: FSEB SNV: SNON:
MAK: MERC MDL: SABLE VTY: F TRA: A DRV: F ABS: N 2STK: N
TRC: N WHB: 106.0 DEX: N ECH: N EYR:
EFAM:
NOX: 0.9049
UNES: 1 TUVFY: 4720
70 310 9509 4 744 51069

ENHANCED 17-JAN-1995 00872670 C002387

05 170119951311111 0007E 70314 SAB1011 MER

ECTION REPORT

P-349 A

F COLORADO

ESULTS

Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
PASS	PASS	PASS	PASS			N/A	0.00

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER

PRO[illegible]H53U9N[illegible]0F96 CDE # SAB40 [illegible]TION 1987 START TIME MER END TIME 70[illegible]05

E 70314

CONSUMER INFORMATION 13:11:11 13:34:39 17-JAN-1

[illegible] comply with state regulations before post acid inspection

EMISSIONS TEST INFORMATION

			LIMITS	RESULTS
		READINGS		
HC GPM			4.0000	PASS
CO GPM			30.0000	PASS
CO2 GPM				
NOx GPM			0.0000	PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CA RESULTS
UNITS	INCHES/H_2O		
LIMITS		LITERS	
READINGS	10.00		
RESULTS			P

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter	PASS	
Fuel Filler Restrictor	PASS	
Air Injection System	PASS	
Oxygen Sensor	PASS	INACCESSIBLE INACCESSIBLE
Check Engine Light	PASS	

Fast pass No Repairs made

IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If you are renewing your registration by mail, follow the instructions regarding the renewal process located on the back side of your renewal notice. If you are renewing your registration in person, the Certificate of Emissions Control must accompany all supporting documents at the time of registration. If the Certificate of Emissions Control is lost, a new inspection is required at the owner's/operator's expense.

IF YOUR VEHICLE FAILED THE INSPECTION

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If yo vehicle failed its first inspection, you are entitled to one free reinspection within 10 calend days if returned to the same independent inspection station. If the first inspection w performed at an Enviro-test center, the reinspection can be performed at any one Enviro-test's centers. The information recorded on this "VEHICLE INSPECTION REPORT" extremely valuable to a repair technician when having your vehicle repaired. The "VEHICI REPAIR FORM", (VRF), located on the back must be completed by the person perform the repairs. The VRF must also accompany the vehicle at the time of reinspection. If yc vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility informati is available at the inspection stations or by calling the Department of Revenue at (3 572-5603.

POSSIBLE CAUSES FOR EMISSION FAILURE

HIGH CO READINGS	HIGH HC READINGS	HIGH NOx READINGS
A. Incorrect air fuel mixture	A. Defective points/electronic ignition	A. Inoperative EGR system
B. Dirty air cleaner, choke or carb./fuel injection	B. Open plug wire or fouled spark plug	B. Incorrect ignition timing
C. Carburetor float level improperly adjusted	C. Vacuum leak	C. Incorrect air/fuel mixture
D. Inoperative air pump	D. Incorrect air/fuel mixture	D. Low octane fuel rating
E. Diluted lubricating oil	E. Inoperative air pump	E. High combustion temperature
F. Soaked fuel evaporative canister	F. Incorrect ignition timing	F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 2 FEE: 0.00 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 0.00 CHK: 0.00 CDT: 0.00 CPN: 0.00

IN2: IN3: 70636 CYL: 6 RNON: 01 RYR: 1995 TYP: LDGV GVW: NVW: 3138 DSP: 3.0 FUL
TVFY: 188A RVFY: 2849 VVFY: 5989 SVFY: EAA9 ADT: 011795131111 SNV: 872670 SNON: 01
SYR: 1997 OCT: 01 REC: MAK: MERC MDL: SABLE VTY: P TRA: A DRV: F ABS: N 2STE: F
TRC: N WHB: 106.0 DEX: N ECH: N EYR:
EPAN:

Did No Repairs to this Vehicle

March 30, 1995

I/M 240 Inspection Procedures

Vehicle Description: 1986 Honda
VIN#: JHMAK5438GS010644
Mileage: 126,064
Date of Inspection: January 9, 1995

Rebuttal to Conclusion by Dept. of Health:

Two different Bar 84 emission tests were performed on this vehicle. Determined by both facilities that the vehicle had cylinder head problems.

When customer heard about lower air pollution standards in effect, he took this vehicle to EnviroTest and passed the emissions test-good for 2 more years.

Viewing information on the attached Dept. of Health report will show incorrect equipment, as the car does not have an on-board computer and was not running in the rich condition.

William Babirad

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director
Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80222-1530
Phone (303) 692-2000

Laboratory Building
4210 E. 11th Avenue
Denver, Colorado 80220-3716
(303) 691-4700

Colorado Department of Public Health and Environment

I/M 240 INSPECTION PROCEDURES

Vehicle description: 1986 Honda

VIN: JHMAK5438GS010644

Milage: 126,064

Date of inspection: January 9, 1995

Reason of concern: The I/M 240 inspection that was performed on this vehicle indicates that the vehicle passed well under the standards.

The previous inspection procedure, (Bar 84 technology), indicates that the vehicle fails.

Conclusion: As the vehicle is being driven the computer optimizes the fuel management system to achieve the lowest possible emissions levels. Since the previous inspection procedure only inspected the vehicle at idle and the I/M 240 inspection procedure inspects the vehicle as it is being driven, this vehicle would have been a false failure using the previous inspection procedure causing unnecessary repairs at the owners expense!

It is possible that a vehicle may operate in a "Rich" condition at idle, however the vehicle may actually be a "Clean" vehicle as it is being driven due to the "On Board Computer System".

Due to the fact that this vehicle was not submitted for a "Vehicle Evaluation" at one of our Technical Centers, we were unable to verify if the vehicle is operating properly.

C000439

VEHICLE INSPECTION REPORT

STATE OF COLORADO

RESULTS

Overall Result	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
PASS	PASS	PASS	PASS	PASS	N/A		N/A	24.25

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
JHMAK5438GS010644	CO	SAC7719	1986	HON	126064

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70115	02	0001	13:30:27	13:43:09	09-JAN-1995

CONSUMER INFORMATION

Congratulations, your vehicle is compliant with all State regulations for this emissions inspection. See the box titled "IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER" for further instructions. Any item listed as "ADVISE" must comply with State regulations before your next inspection.

EMISSIONS TEST INFORMATION

		READINGS	LIMITS	RESULTS
HC GPM		2.4512	4.0000	PASS
CO GPM		8.1090	30.0000	PASS
CO2 GPM		254.8824		
NOx GPM		2.4051	6.0000	PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CAP RESULTS
UNITS	INCHES/H_2O	LITERS	
LIMITS	10.00		
READINGS			PASS
RESULTS	INACCESSIBLE	INACCESSIBLE	

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter - PASS
Fuel Filler Restrictor - PASS
Air Injection System - PASS
Oxygen Sensor - PASS
Check Engine Light - N/A

it was determined this vehicle sh
Failed FOR HC 3.23X standard ISSU
customer decided to TRX Engineers
Instead OF Repairing it Passed

IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If you are renewing your registration by mail, follow the instructions regarding the renewal process located on the back side of your renewal notice. If you are renewing your registration in person, the Certificate of Emissions Control must accompany all supporting documents at the time of registration. If the Certificate of Emissions Control is lost, a new inspection is required at the owner's/operator's expense.

IF YOUR VEHICLE FAILED THE INSPECTION

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If your vehicle failed its first inspection, you are entitled to one free reinspection within 10 calendar days if returned to the same independent inspection station. If the first inspection was performed at an Enviroteist center, the reinspection can be performed at any one of Enviroteist's centers. The information recorded on this "VEHICLE INSPECTION REPORT" is extremely valuable to a repair technician when having your vehicle repaired. The "VEHICLE REPAIR FORM", (VRF), located on the back must be completed by the person performing the repairs. The VRF must also accompany the vehicle at the time of reinspection. If your vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility information is available at the inspection stations or by calling the Department of Revenue at (303) 572-5603.

POSSIBLE CAUSES FOR EMISSION FAILURE

HIGH CO READINGS	HIGH HC READINGS	HIGH NOx READINGS
A. Incorrect air fuel mixture	A. Defective points/electronic ignition	A. Inoperative EGR system
B. Dirty air cleaner, choke or carb./fuel injection	B. Open plug wire or fouled spark plug	B. Incorrect ignition timing
C. Carburetor float level improperly adjusted	C. Vacuum leak	C. Incorrect air/fuel mixture
D. Inoperative air pump	D. Incorrect air/fuel mixture	D. Low octane fuel rating
E. Diluted lubricating oil	E. Inoperative air pump	E. High combustion temperature
F. Soaked fuel evaporative canister	F. Incorrect ignition timing	F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 1 FEE: 24.25 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 24.25 CHK: 0.00 CDT: 0.00 CPN: 0.00
IN1: IN1: 70209 CYL: 4 RNOW: 12 BYR: 1994 TYP: LDGV GVW: VVW: 1985 DSP: 1.5 FUL: GAS
TVSY: E677 RVFY: 07FA VVFY: F023 SVFY: F37C ADT: 010995133027 SNV: 658424 SNON: 01
SYR: 1997 OCT: 01 REC: MAK: HOND MOL: CIVIC VTY: P TRA: M DRV: F ABS: N ZSTK: N
TRC: N WWB: 96.5 DEX: N ECH: N EYR:
EPAW:

Should Have Failed.

VEHICLE INSPECTION REPORT
STATE OF COLORADO

THANK YOU FOR PARTICIPATING IN THE COLORADO A.I.R. PROGRAM

DO NOT DESTROY OR DISPOSE OF THIS REPORT
YOU WILL NEED IT TO REGISTER YOUR VEHICLE

Vehicle Information

License	VIN	Yr.	Make
SAC7719 PP	JHMAK5438GS010644	86	HOND

Cyl.	GVW	Mileage	Eng. Size	Dual Exh.	Tech.
4	LIGHT	125693	1.5 L	NO	0

Station Name: CENTURY CHEVROLET

Date	Time	Station #	Mechanic #	Test Type	Cost
12/29/94	04:11 PM	1026	5078	I	9.00

Inspection Results

YOUR VEHICLE FAILED THE A.I.R. PROGRAM INSPECTION DUE TO:

- EXCESSIVE TAILPIPE EMISSIONS

DETAILS OF WHY YOUR VEHICLE FAILED THE INSPECTION ARE LISTED IN THE TABLES BELOW:

Emissions Control System Inspection

Catalytic Converter	Air Inj. Sys	Fuel Filler	Oxygen Sensor
PASS	N/A	PASS	PASS

Tailpipe Emissions Inspection AT IDLE

	Standard	Previous	Measured	
CO%	1.50		0.09	PASS
HC ppm	400		1638	FAIL

AT 2500 RPM

	Standard	Previous	Measured
CO%			0.25
HC ppm			184

Visible Emissions Inspection
Leaded and/or Conditioned Smoke — PASS

Inspection Number
A5239.3990 1

Dealer Information

Issued	Inspection	Mechanic	Dealer	Plate	Letter
NO					

RETAIN FOR USE ON A RETEST

VET# _____ 7352440

PLEASE TAKE THE TIME TO READ THIS REPORT COMPLETELY

HOW TO USE THIS REPORT

Your inspection results are printed just below the "Vehicle Information" box at left.

If your vehicle passed the inspection, this report and the Certificate of Emissions Control (Emissions Validation Tab) below are your proof of inspection that allows you to proceed with the registration of your vehicle. See registration information at the bottom of this page for details.

When the registration process is complete, this report should be kept in the vehicle along with the registration and proof of insurance.

If your vehicle failed the test inspection, repairs and/or adjustments will be required. The information on the Vehicle Inspection Report regarding your vehicle's failure is very important to the mechanic that repairs the vehicle, so that it should be made available to the mechanic when having the vehicle repaired. All repairs performed to reduce emissions must be documented on the back of the vehicle inspection Report and accompanied by repair receipts at the time of the reinspection. You must surrender your original repair receipts (or copies) at the time of reinspection. If the information on the Certificate of Emissions Control (Emissions Validation Tab) is incomplete or the Certificate contains lines of "X's or asterisks, the certificate is invalid and cannot be used for registration. You will be issued a valid Certificate of Emissions Control for registration purposes when all inspection requirements are met.

A.I.R. PROGRAM REQUIREMENTS

The vehicle owner is required to show proof of compliance with the AIR Program in order to register the vehicle.

The AIR Program inspection consists of the following:

Tailpipe Emissions Inspection - the vehicle's exhaust gas will be tested for excessive Carbon Monoxide (CO) and Hydrocarbon (HC) emissions. Measured levels of these pollutants will be compared to the maximum allowable levels for that model year.

and

Visible Emissions Inspection - the vehicle will be inspected for visible smoke emissions. Any visible smoke (excluding water vapor) will cause the vehicle to fail.

and for 1975 and newer model vehicles:

Emissions Control Systems Inspection - the catalytic converter, air injection system, fuel filler neck restrictor, and oxygen sensor systems must be installed, intact, and operational on the vehicle. Inspectors are to fail the "Oxygen Sensor" for any service maintenance or malfunction light displayed during the inspection if applicable.

All vehicles must pass the Visible Emissions Inspection and all 1975 and newer vehicles must pass the Emissions Control System Inspection. However, a waiver may be issued in some cases for a vehicle that continues to fail the Tailpipe Emissions Inspection after appropriate repairs. For further information refer to the "WAIVER" information on the reverse side of this report.

EMISSIONS WARRANTY

If your vehicle fails the AIR Program Tailpipe Emissions Inspection, it may be eligible for warranty coverage for required repairs. Vehicle manufacturers are required to provide Emissions Warranties with various coverages for at least two years or 50,000 miles, by federal law. For further information, refer to your vehicle's owners manual under the "Emission Warranty" section.

IMPORTANT IMPORTANT IMPORTANT
THIS TAB IS YOUR PROOF OF THE EMISSIONS TEST.

Date

Model Year

ANY ATTEMPT TO ALTER, FABRICATE, OR DUPLICATE THE EMISSION VALIDATION TAB CONSTITUTES FRAUD AND IS PUNISHABLE BY UP TO A $500 FINE AND UP TO SIX

IMPORTANT IMPORTANT IMPORTANT
VEHICLE OWNERS MUST AT THE TIME OF REGISTRATION OR RENEWAL PROVIDE AN EMISSION VERIFICATION TAB. VEHICLES WITHOUT PROOF CANNOT BE REGISTERED OR RENEWED. NO EXCEPTIONS OR EXTENSIONS WILL BE GRANTED. LOST TABS WILL REQUIRE REINSPECTION

LIFT AND PEEL OFF TO THE MOVE TABLE

7352440

EMISSIONS QUESTIONS: CALL 572-5603

VEHICLE INSPECTION REPORT
STATE OF COLORADO

THANK YOU FOR PARTICIPATING IN THE COLORADO A.I.R. PROGRAM

DO NOT DESTROY OR DISPOSE OF THIS REPORT YOU WILL NEED IT TO REGISTER YOUR VEHICLE

7243615

VET#—

PLEASE TAKE THE TIME TO READ THIS REPORT COMPLETELY

Vehicle Information

License	VIN	Yr	Make
SAC7719 PP	JHMAK5438GS010644	86	HOND

Cyl	GVW	Mileage	Eng. Size	Dual Exh	Tach
4	L	125743	91CI	NO	0

Station Name: MTN. VIEW AMOCO 452-6660 112TH AV/IRMA

Date	Time	Station #	Mechanic #	Test Type	Cost
12/30/94	12:06 PM	2021	03336	I--	9.00

Inspection Results

YOUR VEHICLE FAILED THE A.I.R. PROGRAM INSPECTION DUE TO:

EXCESSIVE TAILPIPE EMISSIONS

DETAILS OF WHY YOUR VEHICLE FAILED THE INSPECTION ARE LISTED IN THE TABLES BELOW:

Emissions Control System Inspection

Catalytic Converter	Air Inj. Sys	Fuel Filler	Oxygen Sensor
PASS	PASS	PASS	PASS

Tailpipe Emissions Inspection AT IDLE

	Standard	Process	Measured	
CO%	1.50		0.03	PASS
HC ppm	400		1292	FAIL

AT 2500 RPM

	Standard	Process	Measured
CO%			0.17
HC ppm			150

Visible Emissions Inspection
Visible and/or Opaque Smoke: PASS

Inspection Number

Repair Information

Failed Inspection	Mechanic	Repair	Parts	Labor
NO				

OBTAIN THIS COPY FOR YOU ON REQUEST.

PLEASE TAKE THE TIME TO READ THIS REPORT COMPLETELY

HOW TO USE THIS REPORT

Your inspection results are printed just below the "Vehicle Information" b at left.

If your vehicle passed the inspection, this report and the Certificate Emissions Control (Emissions Validation Tab) below are your proof inspection that allows you to proceed with the registration of your vehicle. S registration information at the bottom of this page for details.

When the registration process is complete, this report should be kept in vehicle along with the registration and proof of insurance.

If your vehicle failed its first inspection, repairs and or adjustments will required. The information on the Vehicle Inspection Report regarding yo vehicle's failure is very important to the mechanic that repairs the vehicle, so t report should be made available to the mechanic when having the vehi repaired. All repairs performed to reduce emissions must be documented on t Vehicle Inspection Report and accompanied by repair receipts at t time of re-inspection. You must retain your original repair receipts for 90 days after date of re-inspection. If the information on the Certificate Emissions Control (Emissions Validation Tab) is incomplete or the Certific contains marks of "X's or asterisks, the certificate is invalid and cannot be used registration. You will be issued a valid Certificate of Emissions Control registration purposes when all inspection requirements are met.

A.I.R. PROGRAM REQUIREMENTS

The vehicle owner is required to show proof of compliance with the A Program in order to register the vehicle.

The A.I.R. Program inspection consists of the following:

Tailpipe Emissions Inspection - the vehicle's exhaust gas will be tested excessive Carbon Monoxide (CO) and Hydrocarbon (HC) emissions. Meas of these pollutants will be compared to the maximum allowa levels for that model year.

and

Visible Emissions Inspection - the vehicle will be inspected for visible smo emissions. Any visible smoke (excluding water vapor) will cause the vehicle fail.

and for 1975 and newer model vehicles

Emissions Control Systems Inspection - the catalytic converter, air inject system, fuel filler neck restrictor, and oxygen sensor systems must be installe intact, and operational on the vehicle. Inspectors are to fail the "Oxygen Sens for any service maintenance or malfunction light displayed during the inspecti if applicable.

All vehicles must pass the Visible Emissions Inspection and all 1975 a newer vehicles must pass the Emissions Control System Inspection. However waiver may be issued in some cases for a vehicle that continues to fail Tailpipe Emissions Inspection after appropriate repairs. For further informati refer to the "WAIVER" information on the reverse side of this report.

EMISSIONS WARRANTY

If your vehicle fails the A.I.R. Program Tailpipe Emissions Inspection, it may eligible for warranty coverage for required repairs. Vehicle manufacturers a required to provide Emissions Warranties with various coverages for at least tw years or 50,000 miles, by federal law. For further information, refer to yo vehicle's owners manual under the "Emission Warranty" section.

IMPORTANT IMPORTANT IMPORTANT
THIS TAB IS YOUR PROOF OF THE EMISSIONS TEST.

IMPORTANT IMPORTANT IMPORTANT
VEHICLE OWNERS MUST AT THE TIME OF REGISTRATIO OR RENEWAL PROVIDE AN EMISSION VERIFICATION TA VEHICLES WITHOUT PROOF CANNOT BE REGISTERED O RENEWED. NO EXCEPTIONS OR EXTENSIONS WILL B GRANTED. LOST TABS WILL REQUIRE REINSPECTION.

7243615

LIFT AND PEEL HERE TO REMOVE LABEL

EMISSIONS QUESTIONS: CALL 572-5603

ANY ATTEMPT TO ALTER, FABRICATE, OR DUPLICATE THE EMISSION VALIDATION TAB CONSTITUTES FRAUD AND IS

March 30, 1995

I/M 240 Inspection Procedures

Vehicle Description: 1988 Oldsmobile
VIN#: 1G3NK14D8JM278495
Mileage: 102,143
Date of Inspection: 1st January 7, 1995 2nd January 17, 1995
Final January 18, 1995
Rebuttal to Conclusion by Dept. of Health:
This vehicle failed 2 I/M 240 tests, with no repairs being made. Please note fast pass criteria with no repairs being performed. Also note the difference of carbon monoxide (CO) levels when driven in a different manner only minutes apart.

William Babirad

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80222-1530
Phone (303) 692-2000-

Laboratory Building
4210 E. 11th Avenue
Denver, Colorado 80220-3716
(303) 691-4700

Colorado Department
of Public Health
and Environment

I/M 240 INSPECTION PROCEDURES

Vehicle description: 1988 Oldsmobile

VIN: 1G3NK14D8JM278495

Milage: 102,143

Date of first inspection: January 7, 1995
Date of second inspection: January 17, 1995
Date of final inspection: January 18, 1995

Reason of concern: The I/M 240 inspection that was performed on this vehicle indicates that the vehicle failed due to excessive CO.

A repair facility indicated that the vehicle was/is operating properly and should pass the inspection.

An improper visual inspections were performed on the vehicle.

Conclusion: The I/M 240 inspection that was performed on January 7, 1995 indicates that this vehicle fails due to excessive CO and a fuel cap problem.

The vehicle returned for a reinspection on January 17, 1995. The vehicle failed the reinspection for excessive CO, however the fuel cap problem had been repaired.

The vehicle was then taken to the West Denver Technical Center on January 17, 1995 to identify the problem with the vehicle. The vehicle passed the I/M 240 inspection at the Technical Center which indicates that the vehicle was operating properly at the time of the Technical Center inspection.

We did nothing to this

C0023861

VEHICLE INSPECTION REPORT

took out Thing & Run it again

STATE OF COLORADO

RESULTS

	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
	FAIL	FAIL	PASS	PASS	PASS		N/A	24.25

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
1G3NK14D8JM278495	CO	HENRIE	1988	OLDS	10210

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70628	05	0007	12:05:54	12:15:13	17-JAN-19

CONSUMER INFORMATION

Your vehicle has failed to comply with required State regulations for emissions inspection. All items listed as failure must be addressed prior to your next inspection. See the box titled "IF YOUR VEHICLE FAILED THE INSPECTION" for further instructions. If your vehicle failed emissions see the box titled "POSSIBLE CAUSES FOR EMISSIONS FAILURE" for further instructions.

EMISSIONS TEST INFORMATION

	READINGS	LIMITS	RESULTS
HC GPM	3.7231	4.0000	PASS
CO GPM	103.4654	30.0000	FAIL
CO2 GPM	251.6028		
NOx GPM	0.5446		PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CAP RESULTS
UNITS	INCHES/H_2O		
LIMITS		LITERS	
READINGS	10.00		
RESULTS	INACCESSIBLE	INACCESSIBLE	PASS

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter - PASS
Fuel Filler Restrictor - PASS
Air Injection System - PASS
Oxygen Sensor - PASS
Check Engine Light PASS

Has no Air System
Sent for Retest with no
Repairs & not test

IF YOUR VEHICLE FAILED THE INSPECTION

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If you are renewing your registration by mail, follow the instructions regarding the renewal process located on the back side of your renewal notice. If you are renewing your registration in person, the Certificate of Emissions Control must accompany all supporting documents at the time of registration. If the Certificate of Emissions Control is lost, a new inspection is required at the owner's/operator's expense.

IF YOUR VEHICLE FAILED THE REINSPECTION

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If your vehicle failed its first inspection, you are entitled to one free reinspection within 10 calendar days if returned to the same independent inspection station. If the first inspection was performed at an Envirotest center, the reinspection can be performed at any one of Envirotest's centers. The information recorded on this "VEHICLE INSPECTION REPORT" is extremely valuable to a repair technician when having your vehicle repaired. The "VEHICLE REPAIR FORM", (VRF), located on the back must be completed by the person performing the repairs. The VRF must also accompany the vehicle at the time of reinspection. If your vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility information is available at the inspection stations or by calling the Department of Revenue at (303) 572-5603.

POSSIBLE CAUSES FOR EMISSIONS FAILURE

HIGH CO READINGS	HIGH HC READINGS	HIGH NOx READINGS
A. Incorrect air fuel mixture	A. Defective points/electronic ignition	A. Inoperative EGR system
B. Dirty air cleaner, choke or carb./fuel injection	B. Open plug wire or fouled spark plug	B. Incorrect ignition timing
C. Carburetor float level improperly adjusted	C. Vacuum leak	C. Incorrect air/fuel mixture
D. Inoperative air pump	D. Incorrect air/fuel mixture	D. Low octane fuel rating
E. Diluted lubricating oil	E. Inoperative air pump	E. High combustion temperature
F. Soaked fuel evaporative canister	F. Incorrect ignition timing	F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 1 FEE: 24.25 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 24.25 CHK: 0.00 CDT: 0.00 CFN: 0.00
IN2: IN3: 70636 CYL: 4 RNOM: 01 RYR: 1995 LIT: 1.6L SVN: NVN: 2690 DSP: 2.3 FUL: G
TVFY: R00C RVFY: 93EA VVFY: 7914 SNV: SNOM:
SYR: OCT: 01 REC: MAK: OLDS MDL: CUTLASS VTY: P VSA: N OWV: F ABS: N ASTE: N
TRC: N WWS: 103.4 GVX: 0 ECH: N EYE:
EFAM:
IHC: 3.7231 ICO: 103.4654 INOX: 0.5446
ERES: F ORES: F FRES: I URES: I TOVFY: C000
Diagnostic ID Number: 00 7031 70 119 5512 0 554 40031

Originally Brought In Customer

C0025907

VEHICLE INSPECTION REPORT

STATE OF COLORADO

RESULTS

Overall Result	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
FAIL	FAIL	PASS	PASS	PASS	PASS		N/A	24.25

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
1G3WU14D8JM[illegible]	CO	[illegible]	1988	OLDS	101[illegible]

PROGRAM	INSPECTOR #	LANE	STATION #	START TIME	END TIME	DATE
E	70415	02	[illegible]	12:16:19	12:34:53	07-JAN-1995

CONSUMER INFORMATION

Your vehicle has failed to comply with required State regulations for emissions inspection. All items listed as failure must be addressed prior to your next inspection. See the box titled "IF YOUR VEHICLE FAILED THE INSPECTION" for further instructions. If your vehicle failed emissions see the box titled "POSSIBLE CAUSES FOR

EMISSIONS TEST INFORMATION

		READINGS	LIMITS	RESULTS
HC GPM		3.9774	4.0000	PASS
CO GPM		86.5626	30.0000	FAIL
CO2 GPM		226.1655		
NOx GPM		0.4379		

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CAP RESULTS
UNITS	INCHES/H_2O		
LIMITS		LITERS	
READINGS	10.00		
RESULTS			FAIL

INACCESSIBLE INACCESSIBLE

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter - PASS
Fuel Filler restrictor - PASS
Air Injection System - N/A
Oxygen Sensor - PASS
Check Engine Light - PASS

Original First test when customer Brought In For Repairs Nothing Found wrong

IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If you are renewing your registration by mail, follow the instructions regarding the renewal process located on the back side of your renewal notice. If you are renewing your registration in person, the Certificate of Emissions Control must accompany all supporting documents at the time of registration. If the Certificate of Emissions Control is lost, a new inspection is required at the owner's/operator's expense

IF YOUR VEHICLE FAILED THE INSPECTION

Your vehicle inspection results are shown on the "VEHICLE INSPECTION REPORT". If your vehicle failed its first inspection, you are entitled to one free reinspection within 10 calendar days if returned to the same independent inspection station. If the first inspection was performed at an Enviotest center, the reinspection can be performed at any one of Enviotest's centers. The information recorded on this "VEHICLE INSPECTION REPORT" is extremely valuable to a repair technician when having your vehicle repaired. The "VEHICLE REPAIR FORM", (VRF), located on the back must be completed by the person performing the repairs. The VRF must also accompany the vehicle at the time of reinspection. If your vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility information is available at the inspection stations or by calling the Department of Revenue at (303) 572-5603.

POSSIBLE CAUSES FOR EMISSION FAILURE

HIGH CO READINGS	HIGH HC READINGS	HIGH NOx READINGS
A. Incorrect air fuel mixture	A. Defective points/electronic ignition	A. Inoperative EGR system
B. Dirty air cleaner, choke or carb./fuel injection	B. Open plug wire or fouled spark plug	B. Incorrect ignition timing
C. Carburetor float level improperly adjusted	C. Vacuum leak	C. Incorrect air/fuel mixture
D. Inoperative air pump	D. Incorrect air/fuel mixture	D. Low octane fuel rating
E. Diluted lubricating oil	E. Inoperative air pump	E. High combustion temperature
F. Soaked fuel evaporative canister	F. Incorrect ignition timing	F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 1 FEE: 24.25 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 0.00 CHK: 24.25 CDT: 0.00 CPN: 0.00
IN2: IN3: 70307 CYL: 4 RNOM: 01 RYR: 1995 TYP: LDGV GVW: NVW: 2696 DSP: 2.3 FUL: GAS
TVFY: 8A52 RVFY: 2694 VVFY: A46E SNV: SNON:
SYR: OCT: REC: MAK: OLDS MDL: CUTLASS VTY: P TRA: N DRV: F ABS: N 2STK: N
TRC: N WHB: 103.4 DEX: N ECH: N EYR:
EFAN:
IHC: 3.9774 ICO: 86.5626 INOX: 0.4379
ERES: F ORES: P PRES: I URES: I TWVFY: 1351
Diagnostic ID Number: 00 4020 70 119 9513 1 619 31934

CO023101

VEHICLE INSPECTION REPORT

STATE OF COLORADO

RESULTS

	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
PASS	PASS	PASS	PASS	PASS	PASS		N/A	24.25

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
1G3NK14D8JM278495	CO	XXXXDEAL	1988	OLDS	102143

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70313	04	0007	09:04:04	09:22:19	18-JAN-1995

CONSUMER INFORMATION

Congratulations, your vehicle is compliant with all State regulations for this emissions inspection. See the box titled "IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER" for further instructions. Any item listed as "ADVISE" may comply with State regulations before your next inspection.

	READINGS	LIMITS	RESULTS		PRESSURE	PURGE	FUEL CAP RESULTS
HC GPM		[illegible]	[illegible]	UNITS	INCHES/H2O	LITERS	
CO GPM		[illegible]	PASS	LIMITS	[illegible]		
CO2 GPM				READINGS			PASS
NOx GPM		[illegible]	PASS	RESULTS	INACCESSIBLE	INACCESSIBLE	

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter PASS
Fuel Filler Restrictor - PASS
Air Injection System - PASS — Has no air system passed no repairs made failed prior test
Oxygen Sensor - PASS
Check Engine Light - PASS

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If you are renewing your registration by mail, follow the instructions regarding the renewal process located on the back side of your renewal notice. If you are renewing your registration in person, the Certificate of Emissions Control must accompany all supporting documents at the time of registration. If the Certificate of Emissions Control is lost, a new inspection is required at the owner's/operator's expense.

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If your vehicle failed its first inspection, you are entitled to one free reinspection within 90 calendar days if returned to the same independent inspection station. If the first inspection was performed at an Enviротest center, the reinspection can be performed at any one of Enviротest's centers. The information recorded on this "VEHICLE INSPECTION REPORT" is extremely valuable to a repair technician when having your vehicle repaired. The "VEHICLE REPAIR FORM", (VRF), located on the back must be completed by the person performing the repairs. The VRF must also accompany the vehicle at the time of reinspection. If your vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility information is available at the inspection stations or by calling the Department of Revenue at (303) 572-5603.

HIGH CO READINGS	HIGH HC READINGS	HIGH NOx READINGS
A. Incorrect air fuel mixture	A. Defective points/electronic ignition	A. Inoperative EGR system
B. Dirty air cleaner, choke or carb./fuel injection	B. Open plug wire or fouled spark plug	B. Incorrect ignition timing
C. Carburetor float level improperly adjusted	C. Vacuum leak	C. Incorrect air/fuel mixture
D. Inoperative air pump	D. Incorrect air/fuel mixture	D. Low octane fuel rating
E. Diluted lubricating oil	E. Inoperative air pump	E. High combustion temperature
F. Soaked fuel evaporative canister	F. Incorrect ignition timing	F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 1 FEE: 24.25 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 0.00 CHK: 0.00 CDT: 0.00 CPN: 24.25
IN2: IN3: 70243 CYL: 4 RNOM: 01 RYR: 1995 TYP: LDGV GVW: HVW: 2696 DSP: 2.3 FUL: GAS
TVFY: 901F RVFY: 66EC VVFY: B60C SVFY: 9720 ADT: 011895090404 SNV: 674674 SNOM: 01
SYR: 1997 OCT: 01 REC: BAK: OLDS MDL: CUTLASS VTY: P TRA: N DEV: F ABS: N 2STR: N
TRC: N WHB: 103.4 DEX: N ECH: N EYR:
EFAR:

Fast pass

First test drive

VEHICLE INSPECTION REPORT

A-1

STATE OF COLORADO

RESULTS

Overall Result	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
PASS	PASS	ADVISE	PASS	PASS	PASS		N/A	0.00

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
1G3NK14D8JM278495	CO	HENRIE	1988	OLDS	102123

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70290	01	0019	14:43:19	14:56:06	17-JAN-1995

CONSUMER INFORMATION

Congratulations, your vehicle is compliant with all State regulations for this emissions inspection. See the box titled "IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER" for further instructions. Any item listed as "ADVISE" must comply with State regulations before your next inspection.

EMISSIONS TEST INFORMATION

		READINGS	LIMITS	RESULTS
HC GPM		0.7611	4.0000	PASS
CO GPM	[illegible]	8.4266	30.0000	PASS
CO2 GPM		293.6527		
NOx GPM		1.0643	6.0000	PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CAP RESULTS
UNITS	INCHES/H_2O	LITERS	
LIMITS	10.00	1.00000	
READINGS		0.38007	PASS
RESULTS	INACCESSIBLE	ADVISE	

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter - PASS
Fuel Filler Restrictor - PASS
Air Injection System - N/A
Oxygen Sensor - PASS
Check Engine Light - PASS

taken to West tech center for evaluation found Nothing wrong

IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER

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IF YOUR VEHICLE FAILED THE INSPECTION

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POSSIBLE CAUSES FOR HIGH FAILURE

HIGH CO READINGS	HIGH HC READINGS	HIGH NOx READINGS
A. Incorrect air fuel mixture	A. Defective points/electronic ignition	A. Inoperative EGR system
B. Dirty air cleaner, choke or carb./fuel injection	B. Open plug wire or fouled spark plug	B. Incorrect ignition timing
C. Carburetor float level improperly adjusted	C. Vacuum leak	C. Incorrect air/fuel mixture
D. Inoperative air pump	D. Incorrect air/fuel mixture	D. Low octane fuel rating
E. Diluted lubricating oil	E. Inoperative air pump	E. High combustion temperature
F. Soaked fuel evaporative canister	F. Incorrect ignition timing	F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 2 FEE: 0.00 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 0.00 CHK: 0.00 CDT: 0.00 CPN: 0.00
IN2: IN3: 70293 CTL: 4 RNON: 01 RYR: 1995 TYP: LDGV GVW: NVW: 2696 DSP: 2.3 FUL: GAS
TVFT: 5508 RVFT: VVFT: SNV: SNON:
STR: OCT: 01 REC: MAK: OLDS MDL: CUTLASS VTY: P TRA: N DRV: F ABS: N 2STK: N
TRC: N WHB: 103.4 DEX: N ECM: N ETR:
EFAN:

VEHICLE INSPECTION REPORT

This car was driven in a different manner A-2

STATE OF COLORADO

RESULTS

	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
PASS	PASS	ADVISE	PASS	PASS	PASS		N/A	0.00

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
1G3NK14D8JM278495	CO	HENRIE	1988	OLDS	102123

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70290	01	0019	15:01:09	15:14:37	17-JAN-199

CONSUMER INFORMATION

Congratulations, your vehicle is compliant with all State regulations for this emissions inspection. See the be titled "IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER" for further instructions. Any item listed as "ADVISE" m comply with State regulations before your next inspection.

EMISSIONS TEST INFORMATION

		READINGS	LIMITS	RESULTS
HC GPM		1.0962	4.0000	PASS
CO GPM		14.0310	30.0000	PASS
CO2 GPM		269.3043		
NOx GPM		1.0124	6.0000	PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL-CAP RESULTS
UNITS	INCHES/H_2O	LITERS	
LIMITS	10.00	1.00000	
READINGS		0.38061	PAS
RESULTS	INACCESSIBLE	ADVISE	

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter - PASS
Fuel Filler Restrictor - PASS
Air Injection System - N/A
Oxygen Sensor - PASS
Check Engine Light - PASS

We had Vic drive this car in a different manner still well within parameters of driving

IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If you are renewing your registration by mail,[2] follow the instructions regarding the renewal process located on the back side of your renewal notice. If you are renewing your registration in person, the Certificate of Emissions Control must accompany all supporting documents at the time of registration. If the Certificate of Emissions Control is lost, a new inspection is required at the owner's/operator's expense.

IF YOUR VEHICLE FAILED THE INSPECTION

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If your vehicle failed its first inspection, you are entitled to one free reinspection within 10 calendar days if returned to the same independent inspection station. If the first inspection was performed at an Enviotest center, the reinspection can be performed at any one of Enviotest's centers. The information recorded on this "VEHICLE INSPECTION REPORT" is extremely valuable to a repair technician when having your vehicle repaired. The "VEHICLE REPAIR FORM" (VRF), located on the back must be completed by the person performing the repairs. The VRF must also accompany the vehicle at the time of reinspection. If your vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility information is available at the inspection stations or by calling the Department of Revenue at (303) 572-5603.

POSSIBLE CAUSES FOR EMISSION FAILURE

HIGH CO READINGS	HIGH HC READINGS	HIGH NOx READINGS
A. Incorrect air fuel mixture	A. Defective points/electronic ignition	A. Inoperative EGR system
B. Dirty air cleaner, choke or carb./fuel injection	B. Open plug wire or fouled spark plug	B. Incorrect ignition timing
C. Carburetor float level improperly adjusted	C. Vacuum leak	C. Incorrect air/fuel mixture
D. Inoperative air pump	D. Incorrect air/fuel mixture	D. Low octane fuel rating
E. Diluted lubricating oil	E. Inoperative air pump	E. High combustion temperature
F. Soaked fuel evaporative canister	F. Incorrect ignition timing	F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 2 FEE: 0.00 LAT: 0.00 TAI: 0.00 DIS: 0.00
CSH: 0.00 CHK: 0.00 CDT: 0.00 CPM: 0.00
IN1: IN3: 70293 CTL: 4 RMON: 01 RTR: 1995 TYP: LDGV GVW: NVW: 2696 DSP: 1.3 FUL: G
TVFT: 7DE9 RVFT: VVFT: SNV: SMON:
STR: OCT: 01 REC: MAK: OLDS MDL: CUTLASS VTY: P TRA: M DRV: F ABS: N 2STL: N
TRC: N WHB: 103.4 DEI: N ECH: N ETR:
EPAN:

March 30, 1995

I/M 240 Inspection Procedures

Vehicle Description: 1987 Chevrolet
VIN#: J81RG5176H8421130
Mileage: 64,594
Date of Inspection: February 2, 1995

Rebuttal to Conclusion by Dept. of Health:
Inspected by Tim Barnett and James Bush of Dept. of Revenue. Bill Babirad has notes written by Tim Barnett at the time of inspection, and we believe a report was filed by Mr. Barnett, but not included in these comments from Dept. of Health.

This vehicle had a bolt and rubber hose blocking the AIR system and this is part of the necessary visual inspection required for I/M 240 testing.

William Babirad

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director
Dedicated to protecting and improving the health and environment of the people of Colorado
4300 Cherry Creek Dr. S.
Denver, Colorado 80222-1530
Phone (303) 692-3600
Laboratory Building
4210 E. 11th Avenue
Denver, Colorado 80220-3716
(303) 691-4700
Colorado Department of Public Health and Environment

I/M 240 INSPECTION PROCEDURES

Vehicle description: 1987 Chevrolet

VIN: J81RG5176H8421130

Milage: 64,594

Date of inspection: February 2, 1995

Reason of concern: An improper visual inspections was performed on this vehicle.

Conclusion: The I/M 240 inspection that was performed on February 2, 1995 indicates that this vehicle fails due to excessive CO only.

Due to the fact that this vehicle was not submitted for a "Vehicle Evaluation", at one of our Technical Centers, we are unable to verify that an improper inspection was performed.

Inspected By Tim Barnett + James Bush
From State of Colorado
Bill Has Note's written By Tim Barnett
AT Time of Inspection

* Had Bolt + Rubber Hose Blocking AIR-System *
And This was Part of A Necessary Visual Inspection

C0162599

VEHICLE INSPECTION REPORT

STATE OF COLORADO

RESULTS

Overall Result	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
FAIL	FAIL	PASS	PASS	PASS	PASS			0.00

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
J81RG5176H8421130	CO	SNK909	1987	CHE	64594

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70258	04	0014	19:01:57	19:11:32	02-FEB-1995

CONSUMER INFORMATION

Your vehicle has failed to comply with required State regulations for emissions inspection. All items listed as failure must be addressed prior to your next inspection. See the box titled "IF YOUR VEHICLE FAILED THE INSPECTION" for further instructions. If your vehicle failed emissions see the box titled "POSSIBLE CAUSES FOR EMISSIONS FAILURE" for further instructions.

EMISSIONS TEST INFORMATION

		READINGS	LIMITS	RESULTS
HC GPM		1.1884	1.0000	PASS
CO GPM	—	49.4650	30.0000	FAIL
CO2 GPM		273.8244		
NOx GPM		0.5617	6.0000	PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CAP RESULTS
UNITS	INCHES/H_2O	LITERS	PASS
LIMITS	10.00		
READINGS			
RESULTS	INACCESSIBLE	INACCESSIBLE	

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter - PASS
Fuel Filler Restrictor - PASS
Air Injection System - PASS
Oxygen Sensor - PASS
Check Engine Light - PASS

Failed Explanation — Air system completly disabled.
Verified By Mercuo

IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If you are renewing your registration by mail, follow the instructions regarding the renewal process located on the back side of your renewal notice. If you are renewing your registration in person, the Certificate of Emissions Control must accompany all supporting documents at the time of registration. If the Certificate of Emissions Control is lost, a new inspection is required at the owner's/operator's expense.

IF YOUR VEHICLE FAILED THE INSPECTION

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POSSIBLE CAUSES FOR EMISSION FAILURE

HIGH CO READINGS	HIGH HC READINGS	HIGH NOx READINGS
A. Incorrect air fuel mixture	A. Defective points/electronic ignition	A. Inoperative EGR system
B. Dirty air cleaner, choke or carb./fuel injection	B. Open plug wire or fouled spark plug	B. Incorrect ignition timing
C. Carburetor float level improperly adjusted	C. Vacuum leak	C. Incorrect air/fuel mixture
D. Inoperative air pump	D. Incorrect air/fuel mixture	D. Low octane fuel rating
E. Diluted lubricating oil	E. Inoperative air pump	E. High combustion temperature
F. Soaked fuel evaporative canister	F. Incorrect ignition timing	F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 2 FEE: 0.00 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 0.00 CHK: 0.00 CDT: 0.00 CPN: 0.00
IN2: IN3: 70471 CYL: 4 RNOM: 12 RYR: 1994 TYP: LDGV GVW: MVW: 1989 DSP: 1.5 FUL: GAS
TVFY: 1DD6 RVFY: 4119 VVFY: 4B1C SWV: SNON:
SYR: OCT: 01 REC: MAK: CHEV MDL: GEO SPECTRUM VTY: P TRA: A DRV: F ABS: N 2STK: N
TRC: N WWB: 94.5 DEX: N ECH: N EYR:
EFAW:
IHC: 1.7103 ICO: 77.5782 INOX: 0.2837 AEN: 0 ATWP: 0 AVR: 0 ANSC: 0 ADIG: 0
ERES: F ORES: P PRES: I URES: I TVVFY: EECB RID: PCNT: 0
Diagnostic ID Number: 01 4040 20 219 9519 0 157 15356

March 30, 1995

I/M 240 Inspection Procedures

Vehicle Description: 1991 Oldsmobile
VIN#: 1G3WR54T8MD313572
Mileage: 127,071
Date of Inspection: February 17, 1995

Rebuttal to Conclusion by Dept. of Health:

This vehicle, as determined by State of Colorado Dept. of Revenue, had unneces repairs made, replacing 3 injectors. The Dept. of Revenue has since sealed the box which contains these injectors with State of Colorado sealing tape. They are currently in possession of Bill Babirad.

William Babirad

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80222-1530
Phone (303) 692-2000

Laboratory Building
4210 E. 11th Avenue
Denver, Colorado 80220-3716
(303) 691-4700

Colorado Department
of Public Health
and Environment

I/M 240 INSPECTION PROCEDURES

Vehicle description: 1991 Oldsmobile

VIN: 1G3WR54T8MD313572

Milage: 127,071

Date of inspection: February 17, 1995

Reason of concern: The I/M 240 inspection that was performed on this vehicle indicates that the vehicle passed well under the standards.

A repair facility has a concern that this vehicle should have failed the inspection due to problems with the vehicle.

Conclusion: As the vehicle is being driven the computer optimizes the fuel management system to achieve the lowest possible emissions levels. Since the old inspection procedure, (Bar 84 Technology), only inspected the vehicle at idle and the I/M 240 inspection procedure inspects the vehicle as it is being driven, this vehicle would have been a false failure using the previous inspection procedure causing unnecessary repairs at the owners expense!

It is possible that a vehicle may operate in a "Rich" condition at idle however, the vehicle may actually be a "Clean" vehicle as it is being driven due to the "On Board Computer System".

Due to the fact that this vehicle was not submitted for a "Vehicle Evaluation" at one of our Technical Centers, we are unable to verify if the vehicle is operating properly.

Just should Have Failed.

CO143506

CLE INSPECTION REPORT

STATE OF COLORADO

RESULTS

Items	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
	PASS	PASS	PASS		N/A	34.25

VEHICLE INFORMATION

VIN/SERIE	LICENSE PLATE	YEAR	MAKE	ODOMETER
CO XXXXX3572		1991	OLDS	127021

LANE #	STATION #	START TIME	END TIME	DATE
06	0003	16:29:47	16:48:09	17-FEB-199

CONSUMER INFORMATION

[illegible] state regulations for this emissions inspection. See the [illegible] for further instructions. Any item listed as "ADVISE" [illegible]

Committee to Elect Allen Michel, Lois Tochtrop, Treasurer
Home 287-7742 State Capitol 866-3091

		HC/AU/NOx			PRESSURE	PURGE	FUEL CAP RESULTS
HC GPM			4.		INCHES/H2O	LITERS	
CO GPM			20.		10.00		
CO2 GPM							PASS
NOx GPM							

STATION INACCESSIBLE INACCESSIBLE

Catalytic Converter - PASS
Fuel Filler Restrictor - PASS
Air Injection System - N/A
Oxygen Sensor - PASS
[illegible] Light - PASS

Ran AT 1.06% CO 5.24 X Last yr std
Ran AT 570 ppm HC 2.59 X Last yr std
and Fast Passed.

this VEHICLE INSPECTION station by mail, follow the [illegible] on the back side of [illegible] registration in person, the accompany all supporting [illegible] Certificate of Emissions [illegible] at the owner's/operator's

00943842

ENHANCED 17-FEB-1995

06 17021995162947

0003E 70047

XXXXX3572 OLDS 1991

1G3WR54T8MD313572 99E8

PLEASE ATTACH TO YOUR INSPECTION RENEWAL NOTICE

	HIGH HC READINGS	HIGH NOx READINGS
Injection [illegible]	A. Defective points/electronic ignition B. Open plug wire or fouled spark plug C. Vacuum leak D. Incorrect air/fuel mixture E. Inoperative air pump F. Incorrect ignition timing	A. Inoperative EGR system B. Incorrect ignition timing C. Incorrect air/fuel mixture D. Low octane fuel rating E. High combustion temperature F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: L PFE: 24.23 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSN: 24.23 CHE: 0.00 CDT: 0.00 CPh: 0.00
: 6 RNOM: 02 RYR: 1995 TYP: LOGV GVW: NVW: 3316 DSP: 3.1 FUL: GAS
: 2007 SVFY: 99E8 ABT: 01179516294? SNV: 94344[illegible] SNOM: 02
MAK: OLDS MDL: CUTLASS VTT: P TRA: A SRV: F ABS: N ISTK: N
TRC: N Vh0: 107.5 DEX: N ECH: N LYR:
EFAR:

This Vehicle was Just Retailed By another Facility Customer Had to Pay For Repair

March 30, 1995

I/M 240 Inspection Procedures

Vehicle Description: 1990 Honda
VIN#: JHMCB7557LC134462
Mileage: 96,200
Date of Inspection: 1st February 21, 1995 2nd February 22, 1995

Rebuttal to Conclusion by Dept. of Health:

This vehicle came in as a gross failure for CO--139 grams. Driven to test facility(with no repairs) and met fast pass criteria.

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

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4300 Cherry Creek Dr. S.
Denver, Colorado 80222-1530
Phone (303) 692-2000

Laboratory Building
4210 E. 11th Avenue
Denver, Colorado 80220-3716
(303) 691-4700

Colorado Department of Public Health and Environment

I/M 240 INSPECTION PROCEDURES

Vehicle description: 1990 Honda

VIN: JHMCB7557LC134462

Milage: 96,200

Date of first inspection: February 21, 1995
Date of final inspection: February 22, 1995

Reason of concern: The I/M 240 inspection which was performed on this vehicle indicates that the vehicle failed due to excessive CO.

A repair facility indicated that the vehicle was/is operating properly and should pass the inspection.

Conclusion: The I/M 240 inspection which was performed on February 21, 1995 indicates that this vehicle fails due to excessive CO.

The vehicle returned for a reinspection on February 22, 1995. The vehicle passed the reinspection.

Due to the numerous sensors which provide information to the computer and control devices which are operated by the computer it is quite possible that an intermittent problem exists on this vehicle. If the vehicle is not inspected at its normal operating temperature it may fail an I/M inspection also.

Due to the fact that this vehicle was not submitted for a "Vehicle Evaluation" at one of our Technical Centers, we are unable to identify the exact cause for this vehicle to fail the I/M 240 inspection.

C006228

VEHICLE INSPECTION REPORT

STATE OF COLORADO

RESULTS

[illegible]	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
FAIL	FAIL	PASS	PASS	PASS	PASS		N/A	24.25

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
JHMCB7557LC134462	CO	XXXX4462	1990	HON	96200

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70320	01	0007	14:55:01	15:02:30	21-FEB-199

CONSUMER INFORMATION

Your vehicle has failed to comply with required State regulations for emissions inspection. All items listed as failure must be addressed prior to your next inspection. See the box titled "IF YOUR VEHICLE FAILED THE INSPECTION" for further instructions. If your vehicle failed emissions see the box titled "POSSIBLE CAUSES FOR EMISSIONS FAILURE" for further instructions.

EMISSIONS TEST INFORMATION

		READINGS	LIMITS	RESULTS
HC GPM		2.3646	4.0000	PASS
CO GPM		[redacted]	[redacted]	FAIL
CO2 GPM		208.5288		
NOx GPM		0.1576	6.0000	PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CAP RESULTS
UNITS	INCHES/H_2O	LITERS	
LIMITS	10.00		
READINGS			PASS
RESULTS	INACCESSIBLE	INACCESSIBLE	

EQUIPMENT INSPECTION INFORMATION

.er - PASS
.or - PASS
.em - N/A
.or - PASS
.ht - PASS

This one is way off Base Failed Heavily for CO But 5 gas Shows 0.01 CO 13 HC Sent Back On. with No Repairs Fast PASS

ISSUED A WAIVER

this "VEHICLE INSPECTION
ation by mail, follow the
ated on the back side of
registration in person, the
accompany all supporting
e Certificate of Emissions
at the owner's/operator's

IF YOUR VEHICLE FAILED THE INSPECTION

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If yo vehicle failed its first inspection, you are entitled to one free reinspection within 10 calend days if returned to the same independent inspection station. If the first inspection wa performed at an Enviro-test center, the reinspection can be performed at any one Enviro-test's centers. The information recorded on this "VEHICLE INSPECTION REPORT" extremely valuable to a repair technician when having your vehicle repaired. The "VEHICL REPAIR FORM", (VRF), located on the back must be completed by the person performi the repairs. The VRF must also accompany the vehicle at the time of reinspection. If yo vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility informatir is available at the inspection stations or by calling the Department of Revenue at (30 572-5603.

POSSIBLE CAUSES FOR EMISSION FAILURE

	HIGH HC READINGS	HIGH NOx READINGS
injection sted	A. Defective points/electronic ignition B. Open plug wire or fouled spark plug C. Vacuum leak D. Incorrect air/fuel mixture E. Inoperative air pump F. Incorrect ignition timing	A. Inoperative EGR system B. Incorrect ignition timing C. Incorrect air/fuel mixture D. Low octane fuel rating E. High combustion temperature F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 1 FEE: 24.25 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 0.00 CHK: 0.00 CDT: 0.00 CPN: 24.25
4 RNOM: 10 RYR: 1995 TYP: LDGV GVW: NVW: 2857 DSP: 2.2 FUL: GA
SCIC SNV: SNOM:
MAK: HOND MDL: ACCORD VTY: P TRA: N DRV: R ABS: N ISTK: N
TRC: N WHB: 107.1 DEX: N ECH: N EYR:
EPAW:
NOX: 0.1576
IRES: I TRVFT: 1934
10 219 9514 5 301 41849

00055771

PH-43

VEHICLE INSPECTION REPORT

STATE OF COLORADO

RESULTS

	Emissions	Evaporative Systems	Equipment Inspection	Smoke	CFC's	Recall	OBD Codes	Total Amount Paid
PASS	PASS	PASS	PASS	PASS	N/A		N/A	0.00

VEHICLE INFORMATION

VIN	STATE	LICENSE PLATE	YEAR	MAKE	ODOMETER
JHMCB7557JC134462	CO	XXXX4462	1990	HON	96216

PROGRAM	INSPECTOR #	LANE #	STATION #	START TIME	END TIME	DATE
E	70321	01	0007	11:13:10	11:28:17	22-FEB-1995

CONSUMER INFORMATION

Congratulations, your vehicle is compliant with all State regulations for this emissions inspection. See the box titled "IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER" for further instructions. Any item listed as "ADVISE" must comply with State regulations before your next inspection.

EMISSIONS TEST INFORMATION

		HEADINGS	LIMITS	RESULTS
HC GPM			4.0000	PASS
CO GPM			30.0000	PASS
CO2 GPM				
NOx GPM			0.0000	PASS

EVAPORATIVE SYSTEMS TEST INFORMATION

	PRESSURE	PURGE	FUEL CAP RESULTS
UNITS	INCHES/H2O	LITERS	
LIMITS	10.00		
READINGS			PASS
RESULTS	INACCESSIBLE	INACCESSIBLE	

EQUIPMENT INSPECTION INFORMATION

Catalytic Converter - PASS
Fuel Filler Restrictor - PASS
Air Injection System - N/A
Oxygen Sensor - PASS
Check Engine Light - PASS

First pass No work Done

IF YOUR VEHICLE PASSED OR WAS ISSUED A WAIVER

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If you are renewing your registration by mail, follow the instructions regarding the renewal process located on the back side of your renewal notice. If you are renewing your registration in person, the Certificate of Emissions Control must accompany all supporting documents at the time of registration. If the Certificate of Emissions Control is lost, a new inspection is required at the owner's/operator's expense.

IF YOUR VEHICLE FAILED THE INSPECTION

Your vehicle inspection results are shown on this "VEHICLE INSPECTION REPORT". If your vehicle failed its first inspection, you are entitled to one free reinspection within 10 calendar days if returned to the same independent inspection station. If the first inspection was performed at an Enviротest center, the reinspection can be performed at any one of Enviротest's centers. The information recorded on this "VEHICLE INSPECTION REPORT" is extremely valuable to a repair technician when having your vehicle repaired. The "VEHICLE REPAIR FORM" (VRF), located on the back must be completed by the person performing the repairs. The VRF must also accompany the vehicle at the time of reinspection. If your vehicle fails the reinspection you may be entitled to a waiver. Waiver eligibility information is available at the inspection stations or by calling the Department of Revenue at (303) 572-5603.

POSSIBLE CAUSES FOR EMISSION FAILURE

HIGH CO READINGS	HIGH HC READINGS	HIGH NOx READINGS
A. Incorrect air fuel mixture	A. Defective points/electronic ignition	A. Inoperative EGR system
B. Dirty air cleaner, choke or carb./fuel injection	B. Open plug wire or fouled spark plug	B. Incorrect ignition timing
C. Carburetor float level improperly adjusted	C. Vacuum leak	C. Incorrect air/fuel mixture
D. Inoperative air pump	D. Incorrect air/fuel mixture	D. Low octane fuel rating
E. Diluted lubricating oil	E. Inoperative air pump	E. High combustion temperature
F. Soaked fuel evaporative canister	F. Incorrect ignition timing	F. Excessive carbon deposits

OFFICIAL USE ONLY

TST: 2 FEE: 4.00 LAT: 0.00 TAX: 0.00 DIS: 0.00
CSH: 0.00 CHK: 0.00 CUT: 0.00 CPN: 0.00
INI: JN3: 70724 C/L: 4 FROM: 10 RYR: 1995 TYP: LDGV GVW: NVW: 2857 DSP: 2.2 FUL: GAS
TVFY: 0123 PVFY: 6671 VVFY: BF54 SVFY: 54E7 ADT: 022295111310 SNV: 564491 SNOW: 02
ST2: 1997 OCT: 01 REC: MAK: HOND MOL: ACCORD VTY: P TRA: M DRV: B ABS: N 2STE: N
TRC: N WRB: 107.1 GEX: N ECH: N EYR:
EPAN:

STATE OF COLORADO

Roy Romer, Governor
Patti Shwayder, Acting Executive Director

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Laboratory Building
4210 E. 11th Avenue
Denver, Colorado 80220-3716
(303) 691-4700

Colorado Department of Public Health and Environment

I/M 240 INSPECTION PROCEDURES

Vehicle description: 1992 Chevrolet

VIN: 1GCDC14K2NZ139592

Milage: 30,781

Date of inspection: February 24, 1995

Reason of concern: The I/M 240 inspection which was performed on this vehicle indicates that the vehicle passed well under todays standards.

A repair facility has a concern that this vehicle should have failed the inspection due to missing equipment.

Conclusion: As part of the I/M 240 inspection, an Emissions Control Systems Inspections, (ECSI), is performed. Each system must be present and appear operational. As part of this inspection the lane inspectors are to look for five different systems to include:

* Catalytic Converter
* Fuel inlet Restrictor
* Air Injection System
* Oxygen Sensor
* Check Engine Light

As indicated by the attached photographs, this vehicle has had the original air cleaner replaced with an after market air cleaner. The two emissions systems that are affected by the removal of the factory air cleaner are the Positive Crankcase Ventilation and the Thermostatic Air Cleaner systems. Neither of these two systems are required to be present to pass the Colorado I/M inspection, however, we DO NOT condone the removal of these systems.

STATE OF COLORADO

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Colorado Department of Public Health and Environment

I/M 240 INSPECTION PROCEDURES

Vehicle description: 1986 Ford

VIN: 1FABP3939GG149243

Milage: 73,820

Date of first inspection: February 10, 1995
Date of second inspection: February 16, 1995
Date of third inspection: February 21, 1995
Date of fourth inspection: February 23, 1995
Date of final inspection: February 23, 1995

Reason of concern: The I/M 240 inspection which was performed on this vehicle indicates that the vehicle failed due to excessive CO on four separate occasions.

A repair facility indicated that the vehicle was repaired and should have passed at the time of the second inspection!

Conclusion: The first I/M 240 inspection that was performed on February 10, 1995 indicates that the vehicle fails due to excessive CO, (60 GPM). The standard for this vehicle is 30 GPM.

The vehicle was repaired and reinspected on February 16, 1995. The vehicle failed the reinspection due to excessive CO, (46 GPM).

The vehicle returned back to the repair facility for more repairs.

The vehicle was reinspected on February 21, 1995. The vehicle failed the reinspection, (36 GPM).

The technician which was working on the vehicle was enrolled in a training course being taught at the West Denver Technical Center. The technician brought the vehicle to class to help identify the cause of the failures. The vehicle passed the I/M 240 at the Tech. Center.

STATE OF COLORADO

DEPARTMENT OF REVENUE

IN RE THE MATTER OF:	)	
	)	
EMPIRE OLDSMOBILE	)	
6160 East Colfax Avenue	)	N O T I C E
Denver, CO 80220	)	
	)	
AIR Program Station #1061,	)	
	)	
Respondent.	)	

YOU ARE HEREBY notified that your Automotive Inspection and Readjustment license is subject to suspension or revocation pursuant to Part 3, Article 4, Title 42, C.R.S. 1984, and the rules and regulations promulgated in connection therewith.

The specific reasons why your license is subject to suspension or revocation are as follows:

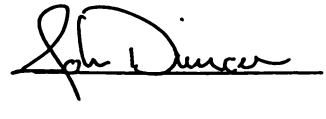
CHARGE 1. November 7, 1985, respondent issued certificate of compliance D1362395 to a 1982 Oldsmobile, VIN 1G3AR47AXCH449327, which at the time of inspection did not comply with the laws or rules and regulations for the issuance of a compliance certificate. CRS 1984, 42-4-314 (3) provides: "In addition to any other grounds for revocation or suspension, such authority to suspend and revoke inspection and readjustment station licenses or the said emissions mechanic's license and to require surrender of said licenses and unused certification of inspection forms and records of said station shall also exist upon a showing that: (a) A vehicle which had been inspected and issued a certification of emissions compliance by said station or by said mechanic was in such condition that it did not, at the time of such inspection, comply with the law or the rules and regulations for issuance of such a certification."

YOU ARE HEREBY ORDERED TO APPEAR AT

The Hearing Section, 140 West 6th Avenue, Denver, Colorado

on December 31, 1985, at 9:30 A.M., to show cause why your license to operate as an Official AIR Program Station should not be suspended or revoked. You are also notified that you have the right to have your attorney appear with you at the hearing.

DEPARTMENT OF REVENUE
MOTOR VEHICLE DIVISION
STATE OF COLORADO



STATE OF COLORADO

DEPARTMENT OF REVENUE

IN THE MATTER OF: EMPIRE OLDSMOBILE 6160 East Colfax Avenue Denver, CO 80220 AIR Program Station #1061 Respondent.	)))))))))	**ORDER**

After investigation and pursuant to the "Stipulation and Agreement" attached hereto as Exhibit A, the Department having reviewed the "Stipulation and Agreement" offered by the "AIR" Program Section and the above-referenced licensee, does hereby FIND:

1. That the terms of the aforesaid "Stipulation and Agreement" are acceptable to the Hearing Officer and are hereby adopted in full as the Findings of the Hearing Officer.

THEREFORE, the Hearing Officer, Department of Revenue, hereby ORDERS:

Ninety days probation for station #1061, beginning December 30, 1985, at 12:00 midnight through March 30, 1986, at 12:00 midnight. Any violations sustained by the Department during this probation period will result in the immediate suspension of the station license, as recommended by the Hearing Section.

ORDERED AND SIGNED at Denver, Colorado this 30th day of December, 19 85.

Hearing Officer
Department of Revenue

STIPULATION AND AGREEMENT

STATION Empire Oldsmobile #1061
6160 E. Colfax Avenue
Denver, CO 80220

DATE 12/30/85

TIME 10:20 a.m.

MECHANIC Edward C. Pritzel #0212

STATE PERSONNEL John Duncan, James Chilton

STATION PERSONNEL Empire Oldsmobile representative.

VIOLATIONS	RULES AND REGULATIONS
~~Issued "pass" certificate to vehicle that~~ did not comply with laws, rules or regulations.	CRS 42-4-314 (4)

SUPPORTING DOCUMENTS ATTACHED Investigative report; Colorado AIR Program Report form; Certificate D1362395

THE ABOVE VIOLATIONS HAVE BEEN DISCUSSED AND EXPLAINED TO ME BY THE DEPARTMENT OF REVENUE. I UNDERSTAND THAT MY AUTHORIZED EMISSIONS STATION AND/OR MECHANIC LICENSE MAY BE SUSPENDED OR REVOKED. I STIPULATE THAT THE FACTS CONTAINED HEREIN ARE TRUE AND ACCURATE AND DO HEREBY UNDERSTAND AND AGREE TO THE FOLLOWING

Ninety days probation for station #1061 and mechanic #0212, beginning December 30, 1985, at 12:00 midnight through March 30, 1986, at 12:00 midnight. Any violations sustained by the Department during this probation period will result in immediate suspension of station and mechanic license, as recommended by the Hearing Section.

STATION REPRESENTATIVE/MECHANIC	DATE	STATE PERSONNEL	DATE
Robert L. Warner Admin. Dir.	12-30-85	John Duncan	12/30/85

Date of Violation: November 7, 1985

Date of Report: November 13, 1985

Investigator: James E. Bush

Violators: EMPIRE OLDSMOBILE
6160 East Colfax Avenue
Denver Aurora, CO 80220
AIR Program Station #1061

EDWARD C. PRITZEL
4780 East Floyd Avenue
Denver, CO 80222
AIR Program Mechanic #0212

Formal Hearing _____

Informal Hearing _____

Other _____

Formal
JD

Statutes/Rules & Regulations Violated By:

I. EMPIRE OLDSMOBILE

A. CRS 1984, 42-4-314 (3) "In addition to any other grounds for revocation or suspension, such authority to suspend and revoke inspection and readjustment station licenses or the said emissions mechanic's license and to require surrender of said licenses and unused certification of inspection forms and records of said station shall also exist upon a showing that: (a) A vehicle which had been inspected and issued a certification of emissions compliance by said station or by said mechanic was in such condition that it did not, at the time of such inspection, comply with the law or the rules and regulations for issuance of such a certification." (102)

Count 1. November 7, 1985, station issued certificate of compliance D1362395 to a 1982 Oldsmobile, VIN 1G3AR47AXCM449327, which at the time of inspection did not comply with the laws, or rules and regulations for the issuance of a compliance certificate.

II. EDWARD C. PRITZEL

A. CRS 1984, 42-4-314 (3) "In addition to any other grounds for revocation or suspension, such authority to suspend and revoke inspection and readjustment station licenses or the said emissions mechanic's license and to require surrender of said licenses and unused certification of inspection forms and records of said station shall also exist upon a showing that: (a) A vehicle which had been inspected and issued a certification of emissions compliance by said station or by said mechanic was in such condition that it did not, at the time of such inspection, comply with the law or the rules and regulations for issuance of such a certification." (103)

Count 1. November 7, 1985, mechanic issued certificate of compliance D1362395 to a 1982 Oldsmobile, VIN 1G3AR47AXCM449327, which at the time of inspection did not comply with the laws, or rules

and regulations for the issuance of a compliance certificate.

Place of Offense: Empire Oldsmobile

Money Value: $10.00

Victim: State of Colorado

Synopsis:
November 7, 1985, a 1982 Oldsmobile, VIN 1G3AR47AXCM449327, registered to Mary and Bernell Seine, 8640 Mason Circle, Westminster, CO., was delivered from the Department of Health Technical Center, 9640 East Colfax Avenue, Aurora, CO., to Empire Oldsmobile, by James Bush and Wayne Brautigam, for an emissions inspection.

The vehicle was tested for emissions standards at the Technical Center prior to being taken to Empire Oldsmobile. The vehicle would not pass the emissions inspection. (See Exhibit 1)

James Bush presented the vehicle to dealership personnel who took all pertinent information and started the repair order. They were told the vehicle needed a new emissions sticker, and to do whatever was necessary to issue a new sticker. Mr. Bush was informed that the vehicle would probably not be ready until the next day, November 8, 1985.

On the morning of November 8, 1985, Mr. Bush and Mr. Jim Chilton returned to Empire Oldsmobile where they paid the bill and took possession of the vehicle between 8:15 a.m. and 10:00 a.m. The bill for the inspection was in the amount of $10.00. There was no indication of any adjustments, either on the repair order (see Exhibit 2) or the customer copy of the Colorado "AIR" Program Report form (see Exhibit 3).

The vehicle had been issued certificate of compliance D1362395 (see Exhibit 4) by Empire Oldsmobile, station #1061, and Edward C. Pritzel, mechanic #0212.

The vehicle was immediately taken to the Aurora Technical Center where it was retested and found to fail the state emissions standards (see Exhibit 5).

Exhibits:
1. Aurora Technical Center test results before delivery.
2. Repair Order from Empire Oldsmobile.
3. Colorado "AIR" Program Report form #1040299.
4. Certificate of Emissions Compliance #D1362395.
5. Aurora Technical Center test results after inspection by Empire Oldsmobile.

Witnesses: James Bush
Wayne Brautigam
Jim Chilton
Jerry Lyons

RECOMMENDATION: Formal Hearing.

INVESTIGATIVE REPORT

DATE OF VIOLATION : November 7, 1985

DATE OF REPORT : November 13, 1985

INVESTIGATOR : James E. Bush

VIOLATORS : Empire Oldsmobile
6160 E. Colfax Av.
Aurora, CO. 80220
399-1950 #1061

Edward C. Pritzel
4780 E. Floyd Av.
Denver, CO. 80222
#0212

TYPE OF ACTION :

Formal Hearing X
Informal Hearing _____
Criminal Charge _____
Other _____

Formal
50

STATUTES/RULES AND REGULATIONS VIOLATED BY :

1. 1061 (STATION)

A. 102 (CODE)

COUNT 1.

On November 7, 1985, Empire Oldsmobile issued a certificate of emission compliance (# 1362395), to a 1982 Oldsmobile VIN. # 1G3AR47AXCM449327, which did not comply with the laws, rules, or regulations of the Colorado emissions program.

2. 0212 (MECHANIC)

A. 103 (CODE)

COUNT 1.

On November 7, 1985, Edward C. Pritzel issued a certificate of emissions compliance (# 1362395), to a 1982 Oldsmobile VIN. # 1G3AR47AXCM449327, which did not comply with the laws, rules, or regulations of the Colorado emission program.

On the morning of November 7, 1985, a 1982 Oldsmobile, serial number 1G3AR47AXCM449327, and registered to Mary and Bernell Seine, of 8640 Mason Circle, Westminster, CO. , was delivered from the emissions technical center at 9640 East Colfax Av. , Aurora, CO., to Empire Oldsmobile, located at 6160 East Colfax Av., by Mr. James Bush and Mr. Wayne Brautigam, for the purpose of obtaining a certificate of emissions compliance or adjustment.

The above vehicle was tested for emissions at the Aurora technical center, located at 9640 E. Colfax Av., prior to being delivered to Empire Oldsmobile. The vehicle would not pass an emissions test. (see exhibit # 1)

James Bush presented the vehicle to the dealership personnel, who took all pertinent information and started the repair order. They were told the vehicle needed a new emission sticker, and to do whatever was necessary to issue a new sticker. Mr. Bush was informed that the vehicle would probably not be ready untill the next day, (November 8, 1985) .

On the morning of November 8, 1985, Mr. Bush and Mr. Jim Chilton, returned to Empire Oldsmobile where they paid the bill and took possession of the vehicle between 8:15 am and 10:00 am. The bill was for the amount of ten dollars, for the inspection. There was no indication of any adjustment, either on the repair order, (see exhibit # 2), or the customer copy of the AIR REPORT FORM, (see exhibit # 3).

The vehicle had been issued a new certificate of emission compliance, number 1362395, (see exhibit # 4), by Empire Oldsmobile, station number 1061 and Edward C. Pritzel, mechanic number 0212.

The vehicle was immediately returned to the Aurora technical center where it was retested and found to fail a state emissions test. (see exhibit # 5)

RECOMMENDATION AND CONCLUSION :

1. Formal Hearing

LIST OF EXHIBITS :

1. Aurora Technical Center test results before delivery.
2. Repair order from Empire Oldsmobile.
3. AIR REPORT FORM.
4. Certificate of emission compliance # 1362395.
5. Aurora Technical Center test results after vehicle was returned.

LIST OF WITNESSES :

1. James Bush
2. Wayne Brautigam
3. Jim Chilton
4. Jerry Lyons

James Bush
INVESTIGATOR/MVCO

James W. Shelt
SUPERVISOR

STATE OF COLORADO "AIR" PROGRAM

COMPLAINT REPORT

Station No. Empire Honda. 1061

COMPLAINT AGAINST: SIMMS TIRE/ EMPIRE OLDS/HONDA

Case File No.

ADDRESS: 6160 E. Colfax Denver. Co 80220

DATE: 7-19-85

Denver. Co 80224

PHONE NO.:

SOURCE OF COMPLAINT: Denise Carlson

VEHICLE INVOLVED:

ADDRESS: U.S. Post Office, Denver, Co

MAKE: Hnda

MODEL: 83 ~~Prelude~~

PHONE NO. 844-2814

YEAR: 1983

VIN #

NATURE OF COMPLAINT: Took car to Simms Tire. Car failed. Took car to Empire Olds Car passed. Took car back to Sims Tire. Car failed.

RESULTS OF INVESTIGATION:

7-22-85 Contacted the complainant. She stated the above complaint. When asked if Empire Olds had given her anything after she had returned for adjustments. No other form (Manadatory Adjust) had been given to her.
7-22-85 Contacted John Roberts Service Director. He stated they had made the necessary adjustments and the car passed. He did not provide a Manadatory Adjust Form.
He requested that the customer return and a Manadatory Adjust Form would be provided.
7-22-85 Contacted the complainant Miss Carlson and advised her to return to the garage .
7-23-85. Contacted Miss Carlson. She stated she was given a Mandatory Adjust Form by Mr. Robe rt s, but had not reurned to the original station (Sims Tire.
7-30-85. Contacted the complainant. Stated she had returned to Sims tire and they refused to give her sticker without retest. After an argument Sims gave a Certificate of Emission without further retesting. She stated she was satisfied with the results of the investigation.

DISPOSITION:
No further action is recommended against Empire Honda. They have been advised of the proper procedures for Adjustments and Manadatory Adjustment Forms. Mr. Robert stated he will insure that no further recurrence of this type in the future . He will instruct his personnel in the proper procedures.

INVESTIGATOR/INSPECTOR: Walter Hoffhines Jr.
Walter Hoffhines Jr.
7-30-85

REVIEWED BY:

ATTACH ANY RELATED DOCUMENTS

DATE CLOSED: 8-1-85

Mr. WYDEN. Now, Mr. Babirad, our time is limited here, so I'm just going to read the State's responses in two cases.

Mr. BABIRAD. All right.

Mr. WYDEN. One involves a 1986 Honda and the other a 1991 Oldsmobile. Both were examples where the Inspection and Maintenance-240 passed the vehicles, but the repair facility thought that the vehicles should have failed. In both cases, the State explained that as the vehicle is being driven, the computer optimize the fuel management to achieve the lowest emission.

The old inspection procedure only inspects the vehicles at idle, while the Inspection and Maintenance-240 inspects the vehicle as it is being driven. Now, they found that, therefore, the old inspection falsely failed the cars and would have caused unnecessary repairs at yours or another facility at the owner's expense.

I think I would be interested in what your reaction to this would be.

Mr. BABIRAD. Sir, here is—I haven't got the statements that you have from the State of Colorado, but being prepared——

Mr. WYDEN. They're right there and are available to you.

Mr. BABIRAD. But, obviously, I haven't had time to read them. But I did happen to just have the evidence right here, the emissions document that came from this particular vehicle. This is one of the reasons why we're concerned. We, as a repair industry, have to take some responsibility and say is there something wrong with the vehicle. That's what we're after. Can the vehicle run better and is there something physically wrong with this vehicle?

This vehicle was running at 7.86 percent carbon monoxide. It is capable of running at 0.00 carbon monoxide.

Mr. WYDEN. Which vehicle are we talking about?

Mr. BABIRAD. The 1991. This particular vehicle had three bad fuel injectors that were replaced at the cost of the consumer. Now, this is one reason why we're kind of upset with this, because this particular person just had purchased this from another dealer. Now, had he had the old Bar 84 test done on the vehicle, they would have had to repair this before he would have bought this vehicle. Now the consumer has bought it and now he's making the repair himself. And, yes, there was something wrong with this vehicle.

Mr. WYDEN. Well, obviously——

Mr. BABIRAD. And, in fact, the——

Mr. WYDEN. The State of Colorado disagrees very strongly with you. The date of inspection was February 17, 1995. I'm just going to read very briefly this. The reason of concern is the Inspection and Maintenance-240 inspection that was performed on this vehicle indicates that the vehicle passed well under the standards. The repair facility has a concern that this vehicle should have failed the inspection due to problems with the vehicle.

Conclusion—as the vehicle is being driven, the computer optimize the fuel management system to achieve the lowest possible emissions. Since the old inspection procedure, Bar 84, technology only inspected the vehicle at idle, the Inspection and Maintenance-240 inspection procedure inspects the vehicle as it is being driven. vehicle would have been a false failure using this previous in-

spection procedure, causing unnecessary repairs at the owner's expense.

Now, perhaps in a second round of questioning we'll have a chance to examine this. As I say, what concerned me is that—and I'm glad you have clarified this—when Empire Oldsmobile was put on probation, that was not on your watch. But as I understand it, you and others supplied this information to the State of Colorado that you all have cited as problems with Inspection and Maintenance-240 and the State of Colorado, on a pretty strong document, which I have read a part of, disagrees.

Now, hopefully, in a second round of questioning, we will——

Mr. BARTON. Respond briefly and then we're going to go to Mr. Waxman.

Mr. BABIRAD. Sir, that's exactly like—this is—I'm not a very good speaker, so you'll have to excuse me.

Mr. BARTON. I think you do pretty well. I wouldn't sell yourself short.

Mr. BABIRAD. But I'll tell you one thing. That's where the proof is in the pudding. We brought it to their face. We put them up, we called them, hey, come down here, verify this or not verify it. Let's get the thing settled. Let's not be making conjectures and stuff on the car that they haven't even came down in this particular case to verify. We gave them every option to verify this vehicle.

If the State of Colorado, if whoever made that statement——

Mr. BARTON. We're not having an oversight hearing on one inspection in the State of Colorado on one car.

Mr. BABIRAD. Right. This is how——

Mr. BARTON. We'll stipulate that reasonable people can disagree about things.

Mr. BABIRAD. We're showing a pattern of things.

Mr. WYDEN. I know Mr. Waxman wants to ask some questions.

Mr. BARTON. Mr. Waxman is recognized for 5 minutes.

Mr. WAXMAN. Thank you, Mr. Chairman. I apologize that I was not here. We were under a 5-minute rule on the floor on amendments. I gather the committee didn't even stop to give people a chance to vote. But I'm pleased that you are here because we made this hearing more honest by giving a balanced point of view and giving you an opportunity to have on the record your testimony.

Mr. Austin, the California pilot project actually had two parts. The first looked at the performance of remote sensing, but the second part looked at the performance of centralized inspection and maintenance programs using two high tech test procedures, the I/M240 and the ASM.

How successful were the I/M240 and ASM test procedures in identifying high polluting cars?

Mr. AUSTIN. Both the I/M240 procedure and the ASM procedure met the performance standards that EPA had projected they expected to see achieved. The I/M240 procedure was a slightly better procedure. The ASM procedure did nearly as well, but EPA's recommendation for States to go with I/M240 was validated.

Mr. WAXMAN. Is it accurate to say that I/M240 identified over 90 percent of the high polluting vehicles?

Mr. AUSTIN. It identified over 90 percent of all of the HC, CO and NO_x excessive emissions that existed in the fleet. That's right.

Mr. WAXMAN. We heard testimony yesterday from Lynn Scarlett and Joel Schwartz of the new California I/M Review Committee on the effectiveness of centralized inspection and maintenance programs using I/M240. They said there was no data to support EPA's claim that centralized I/M240 programs could achieve significant emission reductions.

How would you respond to their assertions? It seems that the California pilot project itself provides very compelling proof that EPA is right. Centralized I/M240 programs can achieve large emissions reductions, isn't that right?

Mr. AUSTIN. Well, the problem with trying to prove that an I/M240 program works is it wasn't until this year that any I/M240 programs were actually operating in practice. That's what the California pilot project was all about, to simulate an I/M240 program before California made the decision as to which kind of a program and what kind of test procedure to put in place. This simulation was as accurate as the State could make it. The State law was amended to require motorists to bring their vehicles in to have this inspection conducted.

The failing vehicles were then repaired until they passed the test, but they weren't sent out for commercial repairs. They were repaired by State employees.

Mr. WAXMAN. Before you get into that, wasn't this I/M240 test an actual real world test, not just simply a modeling?

Mr. AUSTIN. The cars were real cars that were from customer service. They were representative. That's certainly the case.

Mr. WAXMAN. So when you look at what actually happened where they tested cars in California, it seems, from what I hear you saying, that the pilot project confirmed the EPA model.

Mr. AUSTIN. It did.

Mr. WAXMAN. I'm very confused. Why would the California I/M Review Committee come before Congress and testify that centralized I/M240 programs don't work if, in fact, the California pilot project shows just the opposite? And, in fact, Dr. Stedman even acknowledged yesterday that he thought the I/M240 was the most reliable test. He argued that sensing could play a very important role, as well.

But can you explain what's going on?

Mr. AUSTIN. Well, you have to understand that this is the second California I/M Review Committee. There was an earlier California I/M Review Committee that came to the conclusion that a centralized I/M program with a transient test like the I/M240 was the way to go. That's not what the legislature in California wanted to hear, it's not what the Governor's office wanted to hear.

Mr. WAXMAN. It sounds like, in other words, they're substituting their political judgment over scientific judgments.

Mr. AUSTIN. I believe that's what happened, quite clearly.

Mr. WAXMAN. Can you explain to us how you came to have access to the data from the California pilot project and why you decided to prepare your own analysis of that data? Were you afraid that the State of California would try to suppress or unfairly manipulate this data?

Mr. AUSTIN. Well, this is an area that we've been doing research for many, many years and we were very interested in the pro-

gram right from its inception. The initial data we got we got under a Freedom of Information Act request to the State. Later on, the State became much more cooperative with us and provided all the data to us and we did our own independent analysis on it.

Mr. WAXMAN. The idea of remote sensing seems very appealing in concept, but your analysis shows serious problems with the technology in practice. In the California pilot project, the remote sensing devices missed 90 percent of the high polluting cars in Sacramento. Over half of the cars they identified as high polluting turned out to be clean.

Can you explain why remote sensing performs so poorly?

Mr. AUSTIN. The main problem is that the remote senors only take a snapshot of the emissions of the vehicle. Almost every vehicle still being built today can have relatively high emissions during an instant in time if someone is wiggling the throttle or accelerating a little bit hard and if you catch a clean vehicle in that mode, it will look dirty when it's not.

And on the other hand, dirty vehicles sometimes look relatively clean if they cruise very gently by a remote sensor.

Mr. WAXMAN. In yesterday's testimony, the proponents of remote sensing tried to minimize the significance of the California pilot project by citing the 3-month delay when the remote sensor measurements were taken and when the cars were brought in for I/M240 inspections. They maintained that the remote sensing measurements were probably accurate when taken, but that the cars' performance had changed significantly during the 3 months.

How do you respond to this argument? Is it likely that the performance of remote sensing would have looked a lot better if the delay between the remote sensing and the follow-up I/M240 test had been much shorter?

Mr. AUSTIN. No, it's not likely. There have been a lot of experiments done in California where vehicles have been tested and then returned to customer service, brought back in 6 months later and tested again. And on tests like the I/M240, there is extremely little change in emissions over a 6-month period of time, unless the vehicle has a new defect show up or a defect gets repaired.

But in a period of 2 to 3 months, very little of that would have happened.

Mr. WAXMAN. One last question. We heard frequently yesterday about the concept of clean for a day. The opponents of traditional motor vehicle inspections said that these inspections are doomed to fail because lots of drivers game them by becoming clean for a day or preparing for the inspections. Is this an accurate criticism of traditional programs?

Mr. AUSTIN. I think I heard Dr. Stedman yesterday estimate that 60 percent of the vehicles may end up being clean for a day. Our analysis of the data indicates that it's probably less than 10 percent that are clean for a day.

Most of the vehicles that get fixed stay fixed because the motorist has no incentive to go out and spend good money to undo repairs that were just done to the car.

Mr. WAXMAN. Mr. Chairman, thank you for your generosity on giving me additional time to ask these questions and on having Mr. Austin testify.

Mr. BARTON. Thank you, Mr. Waxman. The Chair would now recognize himself for a series of questions. Mr. Austin, I think it's true that you have worked for the EPA in the past, is that not correct, as a staff professional?

Mr. AUSTIN. I left the employ of EPA in 1975.

Mr. BARTON. But you, at one time, were professionally employed on the permanent staff.

Mr. AUSTIN. Twenty years ago.

Mr. BARTON. And is it also safe to assume that since that time, much of your consulting work has been under contract to the EPA?

Mr. AUSTIN. Not much. Some of it has been. We have over 75 clients and EPA has been one of our clients off and on for a number of years.

Mr. BARTON. Would you care to estimate how many of the contracts or clients that you've worked with have been directly associated with EPA?

Mr. AUSTIN. How do you mean associated with EPA?

Mr. BARTON. Done business with, worked for, contracted for, under contract to, research granted to. I'm not an attorney, so I don't know, but that's——

Mr. AUSTIN. Let me respond this way. Our company doesn't have any financial interest in any kind of I/M program. We've done analytical work, technical support work for agencies that have promoted I/M programs, but we don't personally have any financial stake in whether it's centralized, decentralized or remote sensing.

Mr. BARTON. So I am misled when I am told that you're one of the godfathers of the centralized testing concept that EPA is the advocate of. That's not a true statement.

Mr. AUSTIN. It's certainly nothing that I invented and if——

Mr. BARTON. I didn't say you invented it. I didn't say that you invented it.

Mr. AUSTIN. Well, I've studied this issue for many years and I came to the conclusion a number of years ago that this approach that EPA recommends is the best approach. In fact, I held that opinion before EPA did. When I was an employee of the State of California, I had arguments with EPA as to whether EPA should be supporting the California Air Resources Board's efforts.

Mr. BARTON. And I want to make sure I understand this. Your opinion was that there should be a centralized testing program before EPA officially adopted that as a preferred position.

Mr. AUSTIN. When I was the Executive Officer of the Air Resources Board, I independently came to that conclusion and I was unsuccessful in getting EPA's support.

Mr. BARTON. Now, with regards to the remote sensing, the study that we've talked about at some length yesterday and today, the Sacramento study, you obtained that data and you obtained it because of what reasons?

Mr. AUSTIN. Well, a variety of reasons. We have a number of clients who depend on us to analyze data like that. One of our clients, I think unbeknownst to Lynn Scarlett, who testified yesterday, is t State of California Bureau of Automotive Repair. They provided t of data to us and asked us to perform certain analytical tasks pport of their analysis of this big pilot project.

Mr. BARTON. The fact that you were provided the data doesn't indicate that you were provided any kind of special insight or information. I mean, any other person with the qualifications that you have, the clients that you have, could have gotten the data.

Mr. AUSTIN. I don't know. I got the raw data and we did all of our——

Mr. BARTON. I don't think there's anything nefarious about this. It's interesting that the official committee has had difficulty in analyzing the data, and I don't think they've operated in bad faith, and, yet, one well meaning person like yourself has been able to get this data and apparently analyze it much more effectively and efficiently than the entire I/M Review Committee in the State of California.

Mr. AUSTIN. I think part of the problem there is if you were just given the data, you would get a stack of computer diskettes. There would be millions of records in it and you'd have great difficulty making any sense out of it. Our company is one of the few companies that has a lot of experience analyzing data in the format that the State of California uses for collecting data at the lab in El Monte and for collecting the remote sensing data.

Mr. BARTON. So you would stipulate or at least claim that your company is more efficient at analyzing this data. And, I mean, that's not bad. I want to get the data, too.

Mr. AUSTIN. We'd like to think we're more efficient than most at analyzing this kind of data.

Mr. WAXMAN. The private sector often is more efficient.

Mr. BARTON. My time has expired again. We'll continue this in the next round. I now recognize Mr. Wyden.

Mr. WYDEN. Thank you very much, Mr. Chairman. A question for you, Mr. Austin. I am one who is still open on this question of remote sensing. It is not exactly an atomic secret that my friend, the chairman, is very interested in this and we are looking at it carefully.

I was troubled yesterday by a number of the witnesses who talked about the high rate of false positives with respect to remote sensing and a couple of them I thought really minimized the problem. Do you consider the finding of the Sacramento study that remote sensing devices had a false positive rate of more than 50 percent to be a significant and important concern?

Mr. AUSTIN. I do. I think that one of the greatest concerns with remote sensing is that the public will very quickly become turned off on the concept when their car is taken in for repair work and the mechanic can't find anything wrong with it, and there is ample evidence that cars with nothing wrong with them can have relatively high instantaneous emissions caught by a remote sensor.

Mr. WYDEN. I share your view. Why don't you explain that a little bit further. How might that actually take place?

Mr. AUSTIN. If you take a look, for example, at carbon monoxide emissions, and that's what the remote sensing devices work best with, almost all cars being manufactured today have the capability to produce carbon monoxide in concentrations that are very close to zero to almost 10 percent.

There is very little difference in the range of carbon monoxide that can be produced by a clean new vehicle with nothing wrong

with it and an old vehicle with many defects. On average, the new vehicle may have carbon monoxide emissions of only about 2 or 3 grams per mile and an older defective vehicle may have carbon monoxide emissions of 100 grams per mile, but at an instant in time, the new vehicle can look as high as the old vehicle.

So you have to take into account the average emissions of a vehicle when you're trying to determine is this vehicle contributing to air pollution or isn't it. That's why, with the I/M240 test procedure, it's 240 seconds, stop-and-go driving, 0 miles per hour to 57 miles per hour, you have accels, decels, you get an average. That represents how that car is going to contribute to air pollution. When you get a snapshot when the car drives by, you don't know much.

Mr. WYDEN. Mr. Babirad——

Mr. BARTON. Would the gentleman yield on that?

Mr. WYDEN. Could I just ask one other question?

Mr. BARTON. Yes.

Mr. WYDEN. Then I'd be happy to yield the rest of my time on that. Mr. Babirad, as a mechanic, somebody who is expert in this area, expert in the emissions area, do you essentially agree with what Mr. Austin has said on the dynamics of emissions and how that works?

Mr. BABIRAD. In some manners, yes. The most important thing that we have to look at is when we do an emissions test, is if, in fact, we can improve the emissions output of the vehicle and, in fact, if there is somebody malfunctioning in the vehicle that we can repair. This is what we're trying to get at.

You have to be able to verify that there is a component in the vehicle that is not operating properly. Otherwise, all the consumer pays for is guesses.

Mr. WYDEN. Did you disagree with anything that Mr. Austin said on the dynamics of emissions and how that works?

Mr. BABIRAD. No, not really. I really didn't listen to his complete, but——

Mr. WYDEN. I want to yield to the chairman.

Mr. BARTON. My question was to Mr. Austin on the statement about the accuracy of the test, if there are real world peer reviewed studies to document that it is that accurate, because we've had this gentleman testify and then there's press stories, obviously not on the record here, in the committee hearing in Texas, where the I/M240 test has been extremely inaccurate.

Mr. AUSTIN. Well, one of the points Mr. Babirad made which I completely agree with is that the emission result you get from I/M240 depends on how accurately the person driving the vehicle followed the trace. And if you have an I/M program where you don't have software that checks whether the driver really followed that trace the way they should have, you can have wildly different emissions from one test to the next.

That's not because the I/M240 procedure isn't repeatable. It's because it requires someone who is capable of following the trace closely. I've seen evidence of I/M contractors who run their inspectors through a training program that teaches them how to be con- [illegible]t and if that's not done well, then there can be big problems.

[illegible]ar. BARTON. Do you want to?

Mr. WYDEN. I thank the chairman. If I could ask one additional question just so we don't leave Dr. Lawson out there by his lonesome and not involved. Doctor, you suggested a real world comparison of candidate programs as a way to advance science and to examine this issue.

What do you think such a comparison program ought to consist of and how would you advocate it be set up in terms of sponsorship and that kind of thing?

Mr. LAWSON. First, the data don't suggest that any I/M program type of any sort has worked well in California. I have to go on record saying although we believe it must do something, we can't see it in the data.

In that paper that I wrote, I suggested candidate program types be carried out at different locations. At the time we were advocating—not advocating, but suggesting different program types be tested, such as centralized, decentralized, with different kinds of tests, we also suggested a program that had no scheduled testing at all, just used remote sensing. And we believe that that's the only way that we can tell whether any I/M program type will work is do some real world evaluations of the fleets that exist in these program areas.

We would adjust them for age. We would adjust them for the fleet in the area. We would use a combination of roadside pullovers, as well as remote sensing to see if, in fact, there is a change in emissions and tampering and the like, because what we see is I/M doesn't affect most cars. Most people go in, take a test, spend money, and don't reduce emissions.

So an I/M program should go after the worst of the fleet, skim the top off, and if we see a change there, we know I/M is working.

Mr. WYDEN. What you've described sounds like a lengthy involved process which could be pretty costly. How costly, how long, and what do we do in the interim while we're waiting for this assessment?

Mr. LAWSON. First, since air quality is improving in urban areas, I would leave status quo and let the programs operate the way they are. Second, this program would cost a lot less than current I/M program expenditures. In California, we spend a half-a-billion—in California, there's a half-billion dollars spent a year on the program.

I would assume that such a shootout or comparison of methods would cost probably no more than about $1 million, to make sure different kinds of I/M program types are available. Certainly, analysis of those data would not cost nearly that much. It should be done by independent researchers and peer reviewed so that there is no conflict of interest or bias with the results.

Mr. WYDEN. It would take, what, 2 years, 3 years?

Mr. LAWSON. I'd say to get cars through the cycle, it could take 2 to 3 years for that to happen, and it's certainly, in my opinion, worth the wait.

Mr. WAXMAN. Would the gentleman yield?

Mr. WYDEN. Yes.

Mr. BARTON. The gentleman will be recognized for his own questions.

Mr. WAXMAN. Thank you. Dr. Lawson, I'm sorry I wasn't here for your testimony. Have you had a chance to look at Mr. Austin's analysis and do you have any response to it?

Mr. LAWSON. I haven't seen his response in total, but, first, I would say that regarding the pilot study that was done in two separate components, it was mentioned that really the El Monte portion was a test of centralized I/M240 versus ASM testing.

It wasn't really a test of centralized testing. It was a comparison or a shootout between two different test types, I/M240 and ASM, and those can be done centralized or decentralized.

Mr. WAXMAN. Let me ask you a basic question to clarify this, in my mind. I/M we've had for a while and the I/M tests dealt with cars that were idling.

Mr. LAWSON. Yes.

Mr. WAXMAN. The I/M240 is an I/M test using a treadmill.

Mr. LAWSON. Correct.

Mr. WAXMAN. And it's my understanding the I/M240 test is a lot more accurate than the older I/M test, which I gather was used in Minnesota, for which we had some question as to the results.

Do you believe the I/M240 test is a lot more reliable?

Mr. LAWSON. I'm on oath, so I'll say no.

Mr. WAXMAN. You do not think so.

Mr. LAWSON. No. And the reason being is we've done testing with the new data from the El Monte study and what we observe is that in the case of CO and hydrocarbons, all the emissions tests that were employed are equally accurate in finding emissions. That is, the I/M240, the ASM tests, and the Bar 90 test, the two-speed idle, all performed equally well, within 10 percent of finding those molecules that would contribute to the pollution, even the idle test.

Mr. WAXMAN. Now, Mr. Austin has told us that in Sacramento, they did a real world so-called evaluation of I/M240 and his analysis of that is that I/M240 is more highly reliable. Dr. Stedman told us yesterday he thought I/M240 was more reliable. Have you had a chance to look at the same data that Mr. Austin evaluated?

Mr. LAWSON. Yes.

Mr. WAXMAN. And have you just reached a conclusion that's different than he has from the same data?

Mr. LAWSON. I believe so. I've looked at the same data and, again, when we rank order the pollution—and I would like to have my graphs here, and I didn't—but, again, we see—and the reason being is it's an interesting artifact of vehicles that fail. That data set was of failing vehicles, for the most part, about two-thirds of the cars.

What we observe for failing vehicles is that only a small fraction of those cars that are failing vehicles are high emitters. Most of them are marginal emitters that fail.

Mr. WAXMAN. I want to give Mr. Austin a chance to respond, because I'm trying to reconcile this conflict, if we can, of——

Mr. LAWSON. Could I add one more thing, too?

Mr. WAXMAN. Certainly.

Mr. LAWSON. So what we observed with the El Monte data is that in the case of CO and hydrocarbons, all of the emissions tests performed pretty nearly equally well, within 10 percent, of diagnosing CO and hydrocarbon molecules. The difference is with NO_x be-

cause the Bar 90 doesn't test for NO_x. In the case of NO_x, since we couldn't throw the Bar 90 into that comparison, for NO_x, we see that the ASM and I/M240 do about the same, again.

So it would have been nice to——

Mr. WAXMAN. On the NO_x, do you agree, also, that the remote sensor is not as helpful in identifying NO_x?

Mr. LAWSON. It hasn't been independently verified, yes. There are various versions of that that are being developed, but it needs to be independently tested.

Mr. WAXMAN. Mr. Austin, why this difference of opinion? Same test, same data, different conclusions, on the test that we're thinking is the most reliable, whether we want to use it as a backup or the initial test. You claim it is, Dr. Lawson says it isn't.

Mr. AUSTIN. Well, I think one reason for the difference in perspective is that Dr. Lawson is focusing on carbon monoxide emissions and hydrocarbon emissions only. And it is true that even an idle test can identify a significant fraction of the vehicles that have serious hydrocarbon and CO problems. Not as good as I/M240, but it still does identify a significant fraction.

However, when it comes to NO_x emissions, you have to have the I/M240 to get a good identification of the excess NO_x emitters. And more importantly, you have to drive the vehicle, like on I/M240, to do a functional test of the evaporative control system. If you can't test the evaporative control system, you're missing up to half of the hydrocarbon emissions on warm days.

Mr. WAXMAN. What do you say to that, Dr. Lawson?

Mr. LAWSON. You do need some type of loaded mode testing to get some NO_x measurements. The statements that have been made earlier today regarding the importance of hydrocarbon emissions and evaporative emissions, that's been stated as fact. However, the real world data, the end use data don't suggest it's anywhere near that.

And the truth of the matter is we don't know how important hydrocarbon, evaporative, or non-tailpipe hydrocarbon emissions are right now. If they were as large as EPA said they were, we'd be required to keep our garage doors open because people would die from benzene poisoning in their garages.

Mr. WAXMAN. Well, I think you've given us very thoughtful testimony and it's something that may be thoughtful to the point we're going to have to think it over. I'm just sorry my colleague from California, who made the comment that I wasn't here before, isn't here now to hear the testimony, or I never otherwise would say such a thing.

Thank you, Mr. Chairman.

Mr. BARTON. Thank you. The Chair wants to announce that at the conclusion of this panel, we're going to take a recess because we've got two votes on the floor. We've got a motion to recommit and then final passage on the welfare reform bill. So I've got some wrap-up comments and then we'll excuse this panel and then we'll recess until about 1:50 p.m.

But I want to let the third panel know that I'm going to be back and a number of the other members are and we're going to have a full round of testimony and questions.

My final questions, I don't want to belabor this on the remote sensing, but your analysis of the data is not very favorable towards remote sensing. One of the reasons it apparently is not is because you claim it has such a high failure rate.

But from my understanding, your definition of failure is based on the fact that when these cars are called in later, they don't test the same as the remote sensor tests them at the time they were tested. Is that correct or incorrect?

Mr. AUSTIN. That is correct.

Mr. BARTON. Now, have you done analysis of other studies where a centralized test, where there is a Bar 90 test or an I/M240 test, was done the same day as the remote sensing test?

Mr. AUSTIN. Yes.

Mr. BARTON. And in those cases, is there a higher correlation between the tests?

Mr. AUSTIN. No.

Mr. BARTON. You say no to that.

Mr. AUSTIN. That's right. I have personally reviewed data showing remote sensing results collected in close proximity to I/M240 type results or Federal Test Procedure results and the correlation is no better.

Mr. BARTON. On the same cars the same day.

Mr. AUSTIN. That's right.

Mr. BARTON. How would you respond to that, Dr. Lawson? Because that's totally contrary to everything that I have actually seen in writing.

Mr. LAWSON. Well, I believe I'm the only person in the room here who has run FTP's on a dyno, who has put probes in tailpipes in these real world studies to look at Bar 90 readings, and, also, calibrated remote sensors. I have no vested interest in remote sensors, but let me just mention that whenever we use remote sensors and the method that they should be used in, and that is to pull over high emitting cars, more than 95 percent of those cars pulled over fail the roadside inspections, more than 95 percent.

Second, in fact, it's interesting. Those cars that are remaining, some of those cars will fail one or other parts of the test. So it has been shown to be very reliable and different from what we see from the Sacramento pilot portion of that study.

When we've done emissions tests of the idle test versus the remote sensor versus the I/M240 for cars on the road in these real world situations, when we're looking at high emitting vehicles, the correlations are pretty good.

Mr. BARTON. What's pretty good? I mean, I think to be clear, we——

Mr. LAWSON. An R value of .5 to .6. So if you had a data point and had all those points on the graph, you'd see a general relationship.

Mr. BARTON. So that's a linear regression point——

Mr. LAWSON. Yes.

Mr. BARTON. [continuing] that you're talking about.

Mr. LAWSON. That's correct. It's a linear regression of about .5 or .6 for cars that are measured on the same day.

Mr. WAXMAN. Would the chairman yield? I thought this was an interesting point. I'd just be curious to hear Mr. Austin's response to that.

Mr. BARTON. We'll give him an opportunity, subject—we've got about 2 or 3 minutes before both of us have to leave to go vote.

Mr. LAWSON. And I have a plane that leaves in just a few minutes, too. But, again, we see relatively good correlation for cars that are tested with back-to-back tests between remote sensing, idle tests, and I/M240's.

Mr. BARTON. With the linear regression——

Mr. LAWSON. I'd be glad to provide the data to the committee afterwards.

Mr. BARTON. I've seen studies that show a linear regression comparability of about .8. But, in any event, would you like to respond, Mr. Austin, briefly?

Mr. AUSTIN. Well, we have instrumented vehicles that our company owns. We have our own emission test facility. We have been able to demonstrate that a car can look quite dirty at one instant in time and, in fact, over a stop-and-go driving cycle or over the I/M240, has very low emissions. I am familiar with Dr. Lawson's work. I have reviewed most of what he's done, I think.

I've done my own analysis of the correlation between idle emissions and real emissions and stop-and-go driving and never see correlation coefficients in the range of .5 or .8. There's very poor correlation between idle emissions and average emissions and stop-and-go driving. All of EPA's data shows that, all the Air Resources Board's data shows that, and the same data sets also show equally poor correlation with the remote sensing measurements.

Mr. BARTON. We're going to have to conclude this, but it seems somewhat ironic to me that I/M240 is supposed to simulate real world driving. We've got a sensing device out there that actually measures real world driving and, admittedly, it doesn't do as well on NO_x as it should, but since remote sensors can test so many cars in the same given time period that a centralized test can, it would appear to me that there ought to be a meeting of the minds where you use remote sensors to identify the most probable gross polluters, perhaps send them to this I/M240 test, then get people that know how to operate it to make sure that it's operated the way the designers designed it to operate, and then you've got the best of all worlds.

I am going to have to excuse this panel. I do want to thank Dr. Lawson for making the extra effort to come. I appreciate Mr. Austin for staying a day to testify. And we're certainly glad to have Mr. Babirad, who is from the real world and is, I think, attempting to do the Lord's work in making sure that the motoring public is well served.

Gentlemen, you are excused. We're going to recess until 1:50 p.m.

[Brief recess.]

Mr. BARTON. We will reconvene the subcommittee. Our third panel consists of the Honorable Gerald J. LaValle, the Honorable Mike Evans, Mr. Joe Belanger, the Honorable Jim Horn, Mr. Peter Schmidt, and I think you're all in attendance except for State Representative Evans. We've got Congressman Norwood here that wants to introduce Representative Evans.

Before we begin, we'll give Congressman Gekas the opportunity to introduce someone from his State.

Mr. GEKAS. Yes. I thank the Chair. And I do take an extra measure of pleasure in presenting to you and to the members of the committee a gentleman from Pennsylvania who is occupying a State Senate seat, from the western part of Pennsylvania, the Honorable Gerald LaValle.

The gentleman from Pennsylvania, Mr. Klink, who is a member of your committee, has a concomitant area in which they both serve the public in that area of Pennsylvania and they both bring, of course, to your committee and to this witness table a special effect on how western Pennsylvania fits into the entire picture of the subject matter at hand.

Senator LaValle was a former mayor, was a former county commissioner, was a career Marine officer in the esteemed Semper Fideles, and has come to his seat in the Senate of Pennsylvania with a wide variety of experiences that well suit him for the testimony that he is about to present to you.

I might add that he also comes to give the committee a sense of geography. He comes from the same area whence comes Joe Namath, All American and All Pro football player.

Mr. BARTON. Is Joe here?

Mr. GEKAS. No, he's not. He punted.

Mr. BARTON. Bad knees couldn't make it today.

Mr. GEKAS. And while I have the podium, real quickly, that's the same area where Jim Kelly and Dan Marino and Unitas and Montana——

Mr. BARTON. Texas will stipulate that Pennsylvania produced football players.

Mr. GEKAS. All of them except Bobby Lane, who came from your area. At any rate, we are very much co-interested in the subject matter and I leave it in good hands to Senator LaValle. I thank the Chair for allowing me.

Mr. BARTON. I thank the gentleman from Pennsylvania for that gracious introduction. As soon as Mr. Evans gets here, we'll recognize the gentleman from Georgia to introduce him. I think you gentlemen, if you've witnessed any of our preceding panels, realize that this is an investigative subcommittee and, as such, it is our tradition to request that you testify under oath.

Do any of you gentlemen have opposition to testifying under oath?

[No response.]

Mr. BARTON. It's also the tradition and the rules of the House that you do have the opportunity to be advised by counsel, if you so wish. Do any of you gentlemen wish to be advised by counsel?

[No response.]

Mr. BARTON. If not, if you will stand and raise your right hand.

[Witnesses sworn.]

Mr. BARTON. We will start at my left, at your right, and, Senator LaValle, we'd be interested in your testimony. And due to the lateness of the hour, try to hold it to 5 minutes.

TESTIMONY OF HON. GERALD J. LAVALLE, PENNSYLVANIA STATE SENATOR; HON. JIM HORN, TEXAS STATE REPRESENTATIVE; HON. MIKE EVANS, GEORGIA STATE REPRESENTATIVE; PETER W. SCHMIDT, DIRECTOR, VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY; AND JOSEPH BELANGER, DIRECTOR OF PLANNING AND STANDARDS, BUREAU OF AIR MANAGEMENT, CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. LAVALLE. Thank you, Mr. Chairman, and I certainly appreciate Congressman Klink being here and I want to thank you for your very direct comments this morning with EPA, because I think you have a very good handle on what's occurred in Pennsylvania.

I have already been introduced, so I'd like just to note for the record that my testimony is offered from the perspective of a State legislator and really does not necessarily reflect the views of the past or current Pennsylvania administration, nor is it intended to represent official Commonwealth policy.

As you know, Mr. Chairman, the Clean Air Act Amendments of 1990 placed a number of challenging and difficult responsibilities on State jurisdictions throughout the country. The intent is to reduce air pollutants and to improve the quality of air for all Americans. And few will argue with the ambitious goals of this legislation and the problems encountered by States, including Pennsylvania, are not so much with the act itself, but rather with the manner in which we have been forced to achieve these objectives.

Let me first provide you with a brief history of Pennsylvania's experience on this issue. The authority to design an enhanced vehicle emission inspection program to meet the objectives of the Clean Air Act was granted to the Pennsylvania Department of Transportation. While drafting this program, members of the General Assembly were repeatedly advised by the Department that an expansion and upgrade of the basic decentralized system presently in force in 11 counties would not satisfy the requirements of the act.

Based on EPA representations, full credit would not be granted to any program that did not include strict centralized testing. Accepting the EPA's assertions as truth in fact, Pennsylvania moved forward with the design of a centralized program. In late 1993, our Department of Transportation entered into a contract with a private vendor for a centralized testing network.

Just prior to Pennsylvania entering into this agreement, it was learned that the State of California was offering resistance to centralized testing and demanding to negotiate a program with EPA for California. As a result of this resistance, I initiated efforts to delay the implementation of Pennsylvania's program pending the outcome in California.

The EPA's response at that time was that no changes in EPA policy would be forthcoming and that any move by Pennsylvania to delay or alter its program would be met by sanctions. In other words, Mr. Chairman, there were no options.

Following what I consider a major EPA retreat in California, the EPA bureaucracy scrambled to regain its credibility and, in the process, initiated an unfair and misleading attack on a California plan, while, at the same time, proclaiming the existence of flexibility in meeting the act's objectives.

In its attempt to discourage changes in Pennsylvania's program, all legislative efforts to delay and consider alternatives were met by a continued barrage of EPA threats and interference. They painted a picture describing the California plan as a bad deal and a program that would not serve the best interests of Pennsylvania.

To be frank, Mr. Chairman, I do not believe it's the EPA's business to determine what Pennsylvania's best interests are. In Pennsylvania, we have currently in place a decentralized emissions testing network that compliments our State safety inspection system. It is a program that is convenient for our residents and has contributed to improvements in air quality. The "one-size-fits-all" centralized auto emissions inspection program that EPA has attempted to force on States is not the cure-all to the problems associated with mobile source pollution.

It is a program that, in addition to imposing great cost and inconvenience to our motorists, has dubious benefits and one which has been effectively challenged by leading experts within the scientific community. But the EPA has refused to consider other research and has embraced centralized testing as their preferred system.

To make matters worse, the EPA's bias for the centralized program has been woven into the regulations, therefore affording States little or no realistic flexibility in designing alternative systems that are equally effective and that meet the special needs and circumstances of their respective citizens.

In November of 1994, following a year-long debate that involved persistent EPA intimidation and mounting public pressure, Pennsylvania voted to suspend the centralized program. This law, which necessitated an override of the Governor's veto, seeks to provide all Pennsylvanians and the approximately 6 million vehicle owners in our State with a program that achieves improvements in air quality in the most practical, cost-effective and convenient manner.

We need your help, Mr. Chairman. We are in need of true flexibility that allows us to consider options that will not have a negative impact on our infrastructure and economy. In order for this to occur, I believe it is necessary for your committee and Congress to conduct an in-depth review of the EPA regulations governing the I/M program. I would encourage this investigation to focus on the process in which they were conceived, the evidence supporting your adoption and their effect in a real world scenario.

Strong consideration should also be given to reopening the Clean Air Act, as well, particularly as it relates to the establishment of Ozone Transport Regions. Governor Ridge recently informed EPA that Pennsylvania's program has been suspended indefinitely, pending any and all revisions to the regulations. House Resolution 46, introduced by Congressman George Gekas, is, I believe, a prudent step in that direction and I would certainly encourage its passage. It makes a lot of sense, since there is so much confusion between all those so-called experts that EPA has used, for one reason or another, in their best interest.

I thank you and I will certainly be glad to respond to any questions.

Mr. BARTON. I thank the gentleman. We'd now recognize the distinguished Congressman from Georgia to make an introduction of one of the distinguished panelists before us.

Mr. NORWOOD. Thank you, Mr. Chairman. It is with great pleasure that I today introduce to you a friend of mine from home, Representative Mike Evans. I know he didn't mean to be late, but he, like the rest of us have waited so long to have welfare reform, he just had to see the Speaker bang the gavel on the newly-passed welfare bill.

Mike has played an integral part in the fight against centralized emission testing in the metro Atlanta area for the past 2 years. His efforts have been instrumental in preventing the State from implementing a total centralized test program. Representative Evans currently is serving on an ad hoc committee appointed by the Director of Georgia's Environmental Protection Division, investigating alternatives to a centralized test network.

Mike is also the author of a bill, Mr. Chairman, this year in the Georgia State Legislature, this session, which will prohibit centralized testing in Georgia. This bill has been instrumental in prodding the Georgia Department of Natural Resources in support of decentralized testing.

And I am extremely proud to introduce to you, Mr. Chairman, Representative Mike Evans from Forsythe County, Georgia.

Mr. BARTON. We're delighted to have that introduction and delighted to have you on the committee. Mr. Evans, we welcome you to the committee. We're going to let the gentleman to your right testify before you and the Chair will take the privilege to introduce him.

The Honorable Jim Horn is a State Representative from the great State of Texas. In the House, he's on the committee that's trying to come up with a new State implementation plan for the non-attainment areas in Texas, both in his area, the Dallas/Ft. Worth area, but also Houston, El Paso, and I believe Loredo.

He has worked very hard on these issues not just in this session of the Texas Legislature, but in previous sessions. We're delighted to have you with us today. Mr. Horn, we'd be delighted to have your testimony at this point in time.

TESTIMONY OF HON. JIM HORN

Mr. HORN. Thank you very much, Mr. Chairman and members. It's a pleasure to be here. I could simply just ditto the Senator from Pennsylvania's remarks. It's exactly the same situation we have in Texas. I would like to point out that I am Jim Horn, State Representative in District 64 in Texas, which is Denton, Texas, where we trained Mean Joe Green how to play football before we sent him up to Pennsylvania.

But our situation——

Mr. BARTON. Also Phyllis George, a former Miss America.

Mr. HORN. That's very true, and Shirley Catherine Barrett 2 years later. Thank you, Mr. Chairman. I just want to tell you about the real world experience I had involved in this program. I did fight ever going to this program. Over 2 years ago, I began to see what was happening. My father used to own a garage and I know

something about cars. So I objected to it all along and went to every hearing that was ever held in the Metroplex on the issue.

And we were all against it. All the business leaders, all the governmental leaders, everybody was against this centralized program. But then it seemed like we'd go back to a meeting and all of a sudden one person changed their mind, and then another person later would change their mind, and then another person. When we began to check, we found out they had been invited to Austin, our State capitol, and they met with our environmental group, the Texas Air Control Board at that time, and the EPA.

And it was explained to them that this is the only option we really have. And so they picked off our people one at a time. We recently had hearings at DFW Airport about 2 weeks ago where a county judge, county commissioners, the head of the North Central Texas Council of Governments, all came in and testified that they should have never been coerced into this. They objected to it all the way along, but they were forced into this program.

What happened you forced Texas into this program, you forced us, as occurred in Pennsylvania, into an expenditure of over $100 million to set this program up, and now we're strapped with the problem. One thing I can think of right away that might alleviate the problem would be a rider in your appropriations bill that takes money from the EPA's modeling fund and reimburses the States for their costs. Then if there's any money left, they can continue to model some of these things.

But it has been an absolute disaster. This program was scheduled to go into effect in June or July of last year, but our Governor had the good sense to understand that she didn't have a prayer of getting elected if she did that. So they moved the date until January 1. Well, it just so happened she didn't get re-elected anyway, but on January 1, the program went into effect. We went into session around January 10 and before the end of January, we had already passed a bill to postpone this situation for 90 days.

That clock is running. The EPA clock is not running yet, but our clock is running and we're not sure what we're going to do. And I'm deeply involved in that and we're together on this. Our Senator that's leading the charge on this is a, what I would be kind in saying, a moderate Democrat from the Houston area. I'm basically leading the charge in the House and I'm known as a rather conservative Republican from the north Texas area. So it's bipartisan and it crosses all philosophical lines.

When this thing went into effect, the calls our offices got was in the hundreds and into the thousands of complaints from the people that were just—they go in—as you've heard over the last several days, they go into one lane and pass. Their mechanic would say drive it around the block five times and go in a different lane and then it would fail, or vice versa.

We had one person, I believe in our testimony, that came in just as a joke. They had their car done 11 times in one day and never got the same results, ever. I've been really sitting here for a couple days, sitting in on some of these hearings and hearing the things that these other people are testifying to, and it just sounds like all the things we've heard in all of our hearings that we've held in the State of Texas recently.

The public is absolutely not going to accept this program. That is the thing that, as elected officials, we have to understand that. We cannot force something on them. Our projected numbers from our air control people that look at this and say *X* percent are going to fail and then we look at what percent of the tests are faulty or failed fails, I guess you would say, in Texas, that would cause repairs using a 50 percent bracket, what EPA says you should spend on repairs, just using half of that figure, our constituents would project out to spend $45 million a year on repairs that are totally unnecessary. We can't have that.

I have little ladies, elderly people, just very, very scared of taking their car in for this program. It's almost a paranoid situation that occurred. In the State of Texas, our constituents that live in an attainment area—let me put it this way. To register their vehicle, they must take proof that they live in an attainment area. So your 75-year-old aunt——

Mr. BARTON. Non-attainment area.

Mr. HORN. [continuing] in Budha, Texas has to take her utility bill down to the person that lived next door to her for 50 years to prove she lives in Budha because the EPA thinks she's going to cheat on her emissions program. It's ridiculous. We need your help. We need your help to give us full credit and we need your help now to put off the compliance deadlines for a couple years, since we've screwed up the program.

Thank you very much.

[The prepared statement of Hon. Jim Horn follows:]

STATEMENT OF JIM HORN, A STATE REPRESENTATIVE FROM TEXAS

INTRODUCTION

My name is Jim Horn and I have served as a state representative in Denton County since 1981. I am here to testify to the fact that the State of Texas needs the support of Congress in developing a successful and publicly-supported auto emissions testing program.

Prior to the inception of federally-mandated auto emissions testing, Texas experienced a long-term downward trend in air pollutants. Upon the passage of the Clean Air Act Amendments of 1990, Texas acted in good faith and set about formulating a plan to reduce air pollutants by the federally mandated deadline. Despite this cooperation from the State of Texas, the Environmental Protection Agency (EPA) has shown no flexibility towards the state in regards to methods used to bring air quality into compliance. Due to the lack of full credit for remote sensing mechanisms and for decentralized testing stations, the EPA forced Texas to implement a testing program on January 1st of this year using the controversial IM240 test at inconvenient central testing stations. I have yet to receive definitive data as to the improved effectiveness of both the IM240 test and the centralized stations.

Instead, I have heard quite the opposite, both from the people of Texas and from the General Accounting Office (GAO) which conducted an internal governmental study of the EPA's IM approach and of their lack of study of alternative options to the IM240 test.

EPA Administrator Carol Browner and her agency contend that they are flexible in their dealings with states, yet they refuse to accept that a more convenient and publicly-supported plan could be used in Texas. Despite the GAO findings and the findings of the Bar-90 test program conducted in Dallas/Fort Worth, the EPA has denied Texas credits for successful alternative testing programs besides the IM240 and they refuse to acknowledge the recent improvement in air quality. The EPA chooses instead to penalize Texas, a state which has done everything in its power to improve air quality, for not going along with exactly what the agency wants.

HISTORICAL BACKGROUND

In Texas, Houston experienced excessive ozone levels for 85 hours during 37 days in 1989; 75 hours during 37 days in 1991; and 53 hours during only 25 days in 1994. Houston has seen a nearly forty percent drop in dangerous ozone levels since 1988, and only four incidents in 1994 stayed at dangerous level for a prolonged period of time. Dallas experienced excessive ozone levels at different times on 31 days during the three-year period from 1984–1986; 6 days during the three-year period from 1991–1993; and two days during 1994. Dallas county and the city of Fort Worth experienced zero days of excess ozone levels during 1994 according to the Texas State Inspection Association ("Emissions Testing," February 1995, ii). Since 1986, Dallas has experienced an eighty percent drop in dangerous ozone levels.

These statistics further show that these two major metropolitan areas were out of compliance less than one percent of the time. At this time, Dallas/Ft. Worth and El Paso have complied, or are nearly in compliance, with federal levels. Cities like Houston have also implemented their own testing sites over the past twenty years and these testing sites have kept up with the changing demographics of the state as opposed to EPA test sites, some of which have not been updated since 1972.

In determining the non-attainment zones, the EPA used questionable data. As most any expert in the field will tell you, heat has a direct effect on ozone levels, and in evaluating the testing data the EPA failed to take into account the record-breaking temperatures of 1988. The EPA also failed to take into account several other factors which contribute to an urban area's air quality levels. These include percentages of pollutants produced by automobiles as compared with those produced by factories and small businesses such as printers and dry cleaners. For example, vehicles in the Beaumont-Port Arthur fell under the testing mandate despite the fact that vehicles account for only six percent of the emissions recorded in that area.

Also absent from the non-attainment determination factors is the fact that air does not observe international boundaries. For example, El Paso, which is located on the border with Mexico, has been deemed by the EPA to be a non-attainment area. El Paso's smog problem is unique due to its proximity with the city of Juarez. Juarez's emission levels are far above the United State's EPA standards which caused the city of El Paso to be considered "moderately" non-compliant. Tens of thousands of American citizens in the El Paso area were therefore subjected to a test, and required to pay a fee, for a problem they did not create. However, the EPA refused, until recently, to exempt El Paso from the same standards they applied to non-border cities.

Data collected by both the EPA and city-sponsored testing sites supports the fact that auto emissions in Texas have been significantly reduced over the past ten years. A large part of this reduction can be attributed to testing programs already in place.

THE DALLES/FORT-WORTH BAR-90 TEST

In the Dallas/Fort Worth metroplex area, cars, city buses, and light trucks account for nearly sixty percent of emissions. Since 1990, Dallas conducted a decentralized inspection-based emissions test using the Bar-90 method test. This test was conducted in conjunction with an automobile's annual inspection and met with high public approval. As of the end of 1994, 1,400 Bar-90 testing stations were operating in the Dallas/Fort Worth area. These machines successfully tested an average of 1.6 millions vehicles per year. With a cost of $40,000 per testing apparatus as compared to $150,000 for each IM240 unit, the Bar-90 test is more economical and has yet to be proven less effective than the IM240 test. While the IM240 test may be nominally more effective in detecting the marginal polluter, numerous statistics show that between ten and fifteen percent of the cars on the road produce eighty percent of the pollution emitted by automobiles. These cars are the gross polluters, and it would seem logical to develop a program which would target these cars without inconveniencing eighty-five percent of the public. The Bar-90 testing program in Dallas does exactly that.

The Bar-90 tests, the improved vehicle maintenance that they have promoted, and improved technology of newer vehicles have largely accounted for the dramatic decrease in air pollutants in the Dallas/Fort Worth metroplex. The Bar-90 test has proven its affectiveness over a four-year period, a period much longer than the one the EPA used to designate the non-attainment areas, yet the EPA still refuses to accept it as a viable solution to the air contaminant problem.

PROBLEMS RELATING TO THE IM240 TEST IN TEXAS

The EPA has consistently pushed the IM240 testing program as the most effective and, in many canes, the only method of reducing auto emissions. However, in September, 1992, the same year the EPA was initially forcing states like Texas to come up with state implementation plans (SIPs) or face economic sanctions in the form of withholding highway funds (states were later given until November, 1993), the GAO found numerous problems associated with the IM240 program. The most notable problem is the fact that of the cars tested by the GAO, 25 percent failed an initial IM240 test but passed a retest with no repair. In Texas, roughly four million vehicles are scheduled to be tested each year. Of these vehicles, 20 percent are expected to fail ("Air Pollution Threatens the Future of Texas," state-wide ad paid for by Tejas Testing Technology, L.C., of Texas, p4). This means that 800,000 vehicles will fail each year and 200,000 of those will fail unnecessarily. If the owners of these 200,000 vehicles spend even half of what the EPA required in the Clean Air Act of 1990 (CAA) to bring the cars into compliance ($225), that figure would amount to $45 million. That is $45 million dollars spent for absolutely no reason at all except for the colossal stubbornness of the EPA in admitting that flaws exist in their IM240 plan.

There is also evidence that cars tested using the IM240 test are exposed to greater risk of damage than cars which are tested using the Bar-90 technology. In an IM240 test, cars are placed on a dynamometer which rotates the cars' tires to simulate driving conditions of 60 mph. This requires the cars to be secured to the dynamometer by chains and straps. During the short testing period in Texas, numerous vehicles tested have been reported damaged. Of the vehicles tested during the three-week voluntary testing period from December 12 to December 31, 1994, over 100 vehicles were reported damaged, some of them permanently. This figure does not include damage to the cars which the customer may not be immediately aware of. This damage includes premature wear on the tires, chipped paint, and stress and leaks in radiator and gas line and hoses as a result of using a pressure test. Furthermore, many of the hoses which are removed during the IM240 test are damaged when removed and subsequently replaced in damaged condition. This leads to the auto leaving the testing center emitting more noxious gasses than before it was tested.

One of the biggest complaints I have heard from my constituents is that the IM240 test is not convenient. According to some of my constituents, they had to wait in line for over an hour to have their car tested. The Texas Natural Resources Conservation Commission, which overseas the Texas testing program, claims that the average time would have been fifteen minutes once the technicians were more experienced. However, I have heard testimony that in order to comply with OSHA standards and to complete these tests in an effective fashion it would take almost a half-hour to test each car. Furthermore, in Texas the initial testing program was only offered at 27 facilities in Houston, 25 facilities in the Dallas/Ft. Worth area, three facilities in Beaumont/Port Arthur, and four facilities in El Paso. Bach testing center in Houston must test on the average 220 cars per day, and the centers in Dallas must test over 250 cars per day. That's roughly thirty cars per hour. Each station has on the average four testing lanes, which means to handle the amount of cars in need of testing each lane must test a car every eight minutes. We've seen repeated data that the test can barely be conducted in fifteen minutes, much less in sight. So from the testing's very conception it was not set up as a convenience to the consumer.

The inconvenience of the IM240 program continues to mount in light of the fact that the test facilities were only open from 9 a.m. to 5 p.m. during the week. This apparently meant that an individual would have to take off work to have their car tested. Further, in Houston all but one of the testing stations were established in the suburbs. This means that only one station with approximately four lanes handles the dense inner-city population.

After having to take time off work, travel a sometimes considerable distance, then wait over an hour, a vehicle owner must then be subjected to the true insanity of this program—their vehicle's failure. Upon failing, the vehicle has to be repaired at another location and then has to be retested. The cost to repair a car in Texas was initially capped at $450 and due to public pressure was lessened to $150. Furthermore, there was no guarantee that a car which failed, and was then supposedly "fixed", would pass a retest. I have actual documentation of cars which initially failed one or two of the three noxious gasses for which a car is tested and upon retesting failed passage for two or all three emissions including those emissions for which the car had previously passed. In one instance, one of my constituents initially failed the nitrous oxide suction, and after having spent $85 to have their car

fixed failed both the nitrous oxide and hydrocarbon sections of the test. In another instance reported in the *Houston Post*, Don Dunick took his 1983 Ford Fairmont seven times to five different testing centers and never received the same results (Plesa, "Doubt, confusion cloud future of auto emission test program," December 25, 1994). These findings are consistent with those found in the GAO report, page 5.

The IM240 test has been sold to the states by the EPA as a foolproof method of reducing air pollution. The EPA claims the IM240 test is far superior to any other test. The facts presented in my testimony, in the GAO report, and in a University of California Irvine study have not shown this fact to be true. The University of California-Irvine study found that the dynamometer-based tests were only slightly more effective than tailpipe-based tests, and that the consequences of this difference are not large (Henderson, *Reason*, March 1994, p19). A radio show host and a car dealer in Denver found that the differences between the IM240 test and the Bar-90 test were significant and not in favor of the IM240. They intentionally set up several cars to fail the IM240 test and then subjected the cars to both tests. The IM240 test passed all of the care and the Bar-90 test detected all of them for what they were, gross polluters (Tillie Fong, "Emissions testing is a scam...," *Rocky Mountain News*, January 6, 1995, p32A).

The IM240 is just as susceptible to human and mechanical error as any other test because just as no two people (therefore no two test operators) are the same, neither are no two automobiles the same. However, the EPA would like to think that they are. The EPA categorically requires every municipality in the designated nonattainment zones, with the exception of those in California, to use the same computer-generated model to evaluate improvements in their air quality. This means that according to the computer there's no difference between Boston and Austin. The computer model also relies on preformulated averages which many experts have agreed are decidedly skewed on the side of the gross polluters. According to Patrick Bedard in a recent article on auto emissions in *Car and Driver*, "the average... in the case of on-road emissions... is skewed so far off the middle of the group that it no longer describes the typical participant. So programs aimed at averages... will never produce the intended results ("Still Smoggy," April 1995, p107). Therefore, states are stuck in a situation where they are always reaching for an unattainable goal because the data the goal was based on, and the data the EPA continues to insist on using, was flawed.

THE NEED FOR DECENTRALIZED TESTING STATIONS

Auto emissions testing from its conception at the national level by the EPA, to its implementation at the local level by testing companies such as Tejas Testing which operates in Texas, is based on the premise that the average American does not care about the quality of the air they breathe. Not only do they not care about the air and their environment, they will go to great lengths to circumvent any plan put in place to improve the air, the environment, and their quality of life. The EPA's assumption behind requiring centralized testing stations is that Americans on both sides of the testing process, the testers and the ones being tested, are inherently dishonest and will make every attempt to defraud the tests and/or the repair process to make or save a few dollars. The EPA's distrust of the average citizen extends so far that Texas was required to institute a registration-based testing program which assesses a $.25 fee for every motor vehicle registered in the state. According to the EPA, this is to assure that residents in non-attainments areas don't register their care in areas that don't fall under the SIP. This pervasive distrust on the part of the EPA is estimated to cost Texans $3.5 million annually.

Once again, the EPA fails to recognize that Americans have gladly been doing their part to improve air quality. Most notably, consumers spend $2,000 an average for emissions controls on every new car purchased. The American Automobile Association's report "Clearing the Air" found that automobile's have played a decreasing role in the production of urban pollutants over the past twenty five years and that this fact "is due primarily to the success of tightening federal tailpipe emission standards, cutting hydrocarbon and NO_x levels by 96 percent and 76 percent, respectively, over the past 25 years" (Clean Air Controls, October 4, 1994, p2). Consumers haven't revolted against the omissions controls program for cars because it is a program, unlike the centralized IM240 testing program, that has been proven effective.

Despite the claims by the EPA that the centralized testing facilities are necessary to combat fraud, there is evidence that the tests conducted by Tejas Testing in Texas were altered to pass or fail individual vehicles. One of the employees at a Tejas Testing facility in Dallas relayed to our office events whereby cars were passed by entering into the computer erroneous information relating to vehicles

milage, make and model. It's apparent that operators do exert control over the IM240 test results.

Further compounding the problem is the fact that the testing facilities are unable to diagnose the source of the emission problem for a particular vehicle. Thus, a centralized testing program leads to what has been termed the "ping pong" effect. This problem too was discovered by the GAO (p2). Owners must travel back and forth between test and repair facilities in a tireless attempt to be certified. Mechanics at separate sites must therefore go through a lengthy and costly guessing game to try and fix a problem they themselves have never seen (see also GAO, p7). This is yet another reason why decentralized test and repair facilities would better benefit the public. The car owner would benefit by not having to travel between facilities, and the mechanic would benefit by being able to immediately retest the car to insure the car has been brought into compliance.

THE FIFTY-PERCENT CREDIT DEBATE

While the EPA claims it gives states, the flexibility in determining their testing methods, Mike Eastland, Executive Director of the North Central Texas Council of Governments, contends that "we [in Texas] were never really given a choice" (Dallas Morning News, January 2, 1995, p10A). Numerous other state officials involved in the State Implementation Plan (SIP) process echo Mr. Eastland. William H. Quortrup, an environmental engineer and member of the Texas Air Control Board in 1993 when it approved centralized testing, says that "We were hammered to go central... We had to accept [centralized testing]. It was wrong. It will always be wrong" (Loftis, "Residents slam auto emissions testing," *Dallas Morning News,* March 11, 1995). Tarrant County Commissioner Marti VanRavenswaay, who serves as the chair of the North Central Texas Council of Government's clean-air panel, contends that local officials were also forced into using centralized testing, despite the fact that they "had the right idea the first time" in implementing decentralized tests ("Residents slam...") such as the Bar-90 tests which were so successful in Commissioner VanRavenswaay's county and Dallas County.

The EPA system rates each air pollutant roduction method using a credit system. Each non-attainment area must have a certain number of credits to come into compliance. The contralized testing method is rated so heavily that many areas, Texas included, had no choice but to use it so that they would have enough credits to satisfy the EPA's requirements. This is despite the fact that, according to John Hall, chairman of the TNRCC, some areas could meet federal standards without the stringent centralized testing program (Plesa, "EPA to give states more leeway on emission tests," *Houston Post,* December 10, 1994).

The EPA has also said in the past they will not give Texas full credit for any testing program which is not centralized. Thus, if hard, scientific data collected during a one-year period showed emission levels down by twenty percent, the EPA would only give Texas credit for a ten percent reduction. This is yet another example of how the EPA intentionally skews data so states are forced to comply with their regulations and implementation plans.

The refusal of the EPA to give Texas full credit for decentralized tests other than IM240 has resulted in a major loss of revenue for many, small businesses previously involved in the successful Bar-90 test program. Some of these businesses have had to lay off as many as eight or ten employees. Prior to 1995, Texas' commitment to clean air in the form of investment in Bar-90 and Bar-84 test machinery totaled some $21 million (data reported by State Representative Elvira Reyna in a latter to U.S. Representative Sam Johnson, February 21, 1995). The cost of state inspection stickers has also been reduced by almost ten dollars to offset the $23 charge for the IM240 testing and make the testing program more palatable to consumers. Approximately 1300 small businesses are involved in the decentralized state inspection testing program (Rayna), and with this reduction in inspection fees the income these businesses can generate from inspection stickers has been cut in half. The centralized testing system has confused motorists who do not know if they need to continue getting annual safety inspections or not. Furthermore, according to many a garage owner, centralized testing "has threatened their financial survival" (Loftis, "New emissions plan may decentralize tests," Dallas Morning News, February 11, 1995). Auto emissions testing has been touted as a necessary reform that will help business, but how can anybody tell me that cutting a business' earning potential in half, or closing down that business, is helpful?

In addition to not granting full credit for decentralized testing sites, the EPA has told our TNRCC that they would give Texas fewer emission reduction credits if the cars which failed were not repaired by "certified emissions technicians". I have heard from many a mechanic who feel that a number of the cars which fail don't

need to be repaired at all. Even technicians at the testing facilities have told customers that if they were to drive their car around so that their catalytic converters can get hot their car's would pass. Therefore, many of these cars can come into compliance with minimal repairs like changing the car oil and/or spark plugs. To require that all repairs be done by a certified technician is ridiculous. It should make no difference who repairs the vehicle so long as the car complies with set emission standards. Again, it is the EPA who required the usage of certified technicians because of their inherent fear that any mechanic not certified would defraud the testing system, yet I have already given evidence that "certified" testing technicians defrauded the system by entering erroneous data into the test computer.

REMOTE SENSING TECHNOLOGY AS AN ALTERNATIVE TO THE IM240 TEST

Despite the encouraging downward trend in air pollution since the mid-1970s, the SPA has insisted that states implement an onerous and irrational testing program which uses IM240 equipment. What the EPA wants to do is hunt squirrels with the 4th Armored Division. Why? Because it seemed like the best idea in 1990. Only now we're four years down the road and technology has changed dramatically. As early as 1992, the GAO found that two-speed dynamometer procedures used in IM240 tests "are not effective in measuring emissions from... vehicles because they do not simulate actual driving conditions" (p4). What newer technologies exist that would clean the air and be consumer friendly? If the EPA gets its way, states may never know because they are given no credits or monetary incentives to try new programs such as using remote sensing and instituting programs to salvage vehicles which are gross polluters and have proven to be irreparable. Only recently has the EPA acknowledged that remote sensing technology, which does use actual driving conditions, could receive roduction credits. EPA's "head in the sand" approach to these initiatives does not help states who are trying to improve the air quality without unduly burdening their citizens. Again, we can all agree that clean air is the objective; however, federal micromanaging is not the solution.

The EPA claims that it has provided the states with flexibility under the Clean Air Act, yet I hardly call allowing the use of remote sensing technology .5 percent of the time in Texas flexible when the remote sensors have the capability of testing 1,000 cars per hour with little inconvenience to the motorist. Remote sensing technology has the capability to test the vehicles in a real-world situation. According to proponents of remote sensors, they would test each car approximately six times per year as opposed to the once every other year format of the IM240 test. Nearly everyone can see that testing a car twelve times in a two year period is much more likely to catch instances of high emission than testing that same car only once in two years. Everyone, that is, except the EPA which refuses to admit real-world data and continues to hold states to their flawed computer models.

By weighing each possible solution differently from state to state the EPA has forced states like Texas to adopt programs which will not garner public support. As a state official, I have a hard time facing my constituents and telling them that there is a less oppressive program that will reach compliance but that we can't implement it because some bureaucrat in Washington contends that they know what is best for Texas. Most importantly, in this technologically advanced age of media, news travels fast. Citizens in Texas know that as of March 13, 1995 two states are suing the SPA over the testing program mandates. They know that at least five states are resisting implementing the IM240 program, and that of these five states, two, New Jersey in particular, have made no attempts to even submit SIPs ("Inspection/Maintenance Programs: A State-by-State Analysis," American Legislative Exchange Council, March 13, 1995, p4-5). In the case of New Jersey, the EPA has not followed through by imposing sanctions. Citizens in Texas see that other states are not being punished for not following along with the SPA and they write to my office saying that in actuality, Texans are being punished more for doing what they were supposed to do. Why should a car driver in Texas have to wait in long lines, make numerous trips between stations, and spend money on unnecessary repairs when someone in New Jersey or Vermont or Maine or Virginia, states with as many emissions problems as Texas, does not have to? The EPA's unequal treatment of the states has led to the massive public outcry against the IM240 testing program implemented in Texas, and I for one cannot disagree with a single voice out there who refuses to take such treatment from the federal government.

CONCLUDING REMARKS

I would like to conclude my testimony by repeating several key facts. Since 1988, emissions pollution has dropped by forty percent in Houston and by eighty percent in Dallas/Fort Worth. Publicly supported, decentralized, inspection-based Bar-90

tests have been proven effective in reducing air contaminants in Dallas/Fort Worth. IM240 tests have not been proven significantly more effective than Bar-90 tents, but have instead been proven susceptible to operator error, vehicle damage, and burdensome time constraints placed on vehicle owners. Additionally, centralized testing has not been proven more effective than decentralized testing, but has instead added mass confusion to the testing process by necessitating that vehicle owners make at least three separate trips between test and repair facilities if their vehicle fails. Lastly, the EPA has weighed the reduction credits structure heavily in favor of centralized testing and has given Texas no leeway in pursuing other options such as the already effective Bar-90 and the newer remote sensing technology.

I have spoken with Governor Bush and he has continually requested more flexibility from the EPA with regards to implementing a testing program in Texas which will be given full credit. A stringent, EPA-mandated program will not be deemed successful if it requires more sacrifice from our already overburdened businesses and taxpayers. Contrary to the EPA's belief, citizens have willingly gone along with many efforts to improve the quality of the air around them. They pay more for new, efficient cars, and, in the Dallas area, they submitted their vehicles to a yearly inspection. Again, let me emphasize that the programs we have in place are already reducing emission levels and will continue to do so in the future because they have garnered the public support. Any program, such as the EPA-mandated centralized IM240 tests, embarked upon without the public support is certainly doomed to failure and we can all agree that failure in the area of improved air quality is an option nono of us can live with.

Mr. BARTON. Thank you, Representative Horn. Representative Evans, before we allow you to testify, you need to be aware that it's the tradition of this subcommittee to require all testimony be under oath. Do you have a problem with testifying under oath?

[No response.]

Mr. BARTON. You should also be advised that you've got the rights under the rules of the House to be advised by counsel. Do you wish to be advised by counsel?

[No response.]

Mr. BARTON. If you'll stand up, then, and hold up your right hand.

[Witness sworn.]

Mr. BARTON. We'd like to hear from you in 5 minutes, please.

TESTIMONY OF HON. MIKE EVANS

Mr. EVANS. Thank you, Mr. Chairman and members of the committee, and I certainly want to thank Mr. Norwood for the kind introduction. I want to apologize for my voice today. Although I do have a southern accent, it's somewhat laced with a springtime cold today.

I've been involved, Mr. Chairman, in this fight for about 2 years now. I got involved with the fight only days away before Georgia might have signed a centralized contract. This plan that we would have had increased the number of counties testing from about 4 to 13, while reducing the number of facilities from 750 to 25, from about 1 million cars to 2 million cars.

Now, it doesn't take a rocket scientist to figure out what that would ultimately mean, for consumers and constituents, long lines and short tempers. In fact, if this plan is implemented under current EPA guidelines, there will be enough voter dissatisfaction out there that this Congress or the States won't have to enact term limits.

Fortunately, Georgia has not signed a contract with a centralized tester and is not locked into a program yet. A major stumbling block in crafting a program for Georgia has been EPA's insistence

on a one-size-fits-all model. The models prescribed by EPA's rules are based on the air quality problems in Los Angeles and the northeast. Atlanta doesn't fit neatly into this one-size-fits-all model, and I just want to bring a few examples.

The standard EPA guidance assumes that States have a forested area of 10 percent. Georgia's forested areas comprise about 50 percent, 57 percent of the non-attainment area. In fact, no southern city has as little as 10 percent forested area. In 1990, when the Clean Air Act Amendments were written, natural sources were considered a very small influence on States' emissions level. It has since been proven, and particularly in Atlanta, that biogenic sources play a far greater role than previously thought. Highway mobile sources in 1990 comprised 36 percent of VOC's, while biogenic sources, the trees and the vegetation, contributed about 39 percent. In other words, the trees and vegetation cause a larger problem than the cars do.

There's a wide gap between the rulemaking process at the Federal level by EPA and the realities of implementation at the State level. Here is one example. EPA's rules require registration denial as a means of enforcement. The reality in Georgia is that we have a 4-month tag registration period that will be in place until 1998. So the EPA's rules fail to take into account different laws in different States.

EPA's explicit definitions hamper States from solving their own problems. A funny example of this is the rule, it's right in the rules that EPA has put out, defining a decentralized test-only station. An activity specifically prohibited at these stations is one that has become somewhat of a rallying symbol for us, and that is the prohibition of selling fuzzy dice at these decentralized test-only stations.

It's hard to imagine an EPA bureaucrat spending taxpayer money to tell States that they can't sell fuzzy dice. What possible effect can this have on emissions reductions? Obviously, it has very little, if any.

EPA should define the parameters——

Mr. BARTON. Would the gentleman suspend?

Mr. EVANS. Yes.

Mr. BARTON. Are they allowed to sell the dogs that wag?

Mr. EVANS. That is not specifically mentioned, but I'm sure, after you've made that comment, that they will amend those rules. EPA should define the parameters and require net results of a test program, leaving the actual program design up to each State. EPA rules discount test and repair emissions testing by 50 percent. Georgia has a unique program made up of test and repair stations, as well as test-only stations, with about half being tested at each.

Undercover checks performed by the State Patrol find virtually no difference between the two types of stations. In EPA's roadside tampering surveys, Georgia has performed as well as cities with centralized test programs. The study that EPA uses as an example of improper testing in Georgia is a 1988 undercover audit of 10 emissions testing stations, using two vehicles for a whopping five tests each. Ten tests, when over a million vehicles are checked a year, can hardly be considered representative.

EPA stated in this covert audit it used "subtle deception in the way it tampered with the car that was used." Does tricking an

emissions tester prove anything about a State's program? I don't believe so.

For over a year now, we've been hearing about EPA's new flexibility. It seems that recently there have been small advances in that direction due, in part, I believe, to the November elections, as well as EPA's hopes that they can preempt Congress from revisiting the Clean Air Act.

EPA's assertions that they have been flexible is simply not so. We have not seen it in Georgia, nor do I believe the other States have seen it either. The only thing that we have heard from EPA is sanctions, sanctions, sanctions.

During the past few decades, we have seen virtually every cornerstone of America's social identity get lost to progress. Motherhood has changed by definition and perception. Hotdogs and apple pie have been declared off limits by health experts. Baseball is—well, need not say anymore about baseball. The car, the automobile is certainly not a birth right, but a privilege that has evolved into the last remaining aspect of individual Americans' individuality is under the microscope.

Do we need to change our behavior with respect to the car? I think the answer is unequivocally yes. But mandating social change has never worked very well before. Allowing States to meet their citizens' own terms is the best way to effect this social change. But EPA has repeatedly asserted that they do not want to or do not wish to reopen the Clean Air Act. However, if we are left with no other option, then that will be EPA's choice. And the response will not come from the special interest or the elected officials, it will come from the tens of thousands of small businesses, owners, and millions and millions of car owners, many of whom are registered voters.

The decision of how and when this change in policy occurs, and it will occur, is in the hands of EPA. In the words of Thomas Jefferson, "A little rebellion now and then is a good thing." A little rebellion is here now right in front of you.

It is abundantly clear, in closing, that the people across this country do not want and will not accept this consumer-unfriendly plan. It is also just as clear that without public support, any plan is bound to fail. Please help us by allowing Georgia to tailor a plan that specifically meets the needs of Georgia.

Thank you, Mr. Chairman.

Mr. BARTON. Thank you. The Chair wants the other committeemen to know, panelists, that since he was from Georgia, he was given extra time because it just takes him longer to say the same words.

Mr. EVANS. That's right. That's exactly right.

Mr. BARTON. We'd now like to hear from Mr. Peter Schmidt, who is the Director of the Department of Environmental Quality for the great State of Virginia. Mr. Schmidt.

TESTIMONY OF PETER W. SCHMIDT

Mr. SCHMIDT. Thank you, Mr. Chairman and members of the subcommittee, for inviting me to present testimony on the automobile emissions inspection and maintenance program. Before I begin, let me say very clearly that like most Americans, I am for

clean air. The question that is ripe for debate is how best to achieve improvements in air quality while ensuring they are based on practical, reasonable, cost-effective, scientifically-based approaches.

This question is especially ripe with respect to I/M programs. We believe there are several defects with EPA's approach to I/M which have rendered the program unworkable in its current form. First, the program lacks emphasis on the most important element of any program involving citizens—public acceptance. EPA has stated crisply and correctly that I/M programs need to be accepted and supported by the public to be successful.

Unfortunately, they have not built a program based on this recognition. EPA needs to help set standards of performance and then let States use their discretion to choose the methodology for assuring compliance. No prescriptions, just performance.

In a Gallup poll earlier this year, 88 percent of citizens in northern Virginia opposed centralized testing. I would also add that a bill for a decentralized test and repair program only passed our General Assembly last month, 100-to-nothing in the House and 40-to-nothing in the Senate.

Second, EPA's decision to impose a 50 percent penalty on all test and repair networks is not well founded. This issue is critically important to Virginia, along with a host of other States. We believe the burden of proof for program reliability or lack thereof should be shifted from the States to EPA. In other words, our programs are innocent until proven guilty, with the presumption that States and their citizens are trying to do the right thing.

I'd like to outline how we believe the current problems in the I/M program could be fixed. First and most importantly, the generic 50 percent discount should be eliminated. If EPA believes a specific program is deficient, it should be compelled to prove that it is and to demonstrate the extent to which it is deficient.

Second, States should be allowed in future programs to take credit for all enhanced program design elements which were not previously present in basic test and repair programs. Despite mandating new program features which will improve both centralized and decentralized programs, EPA gives no credit for test and repair networks for having such features.

Third, States should be able to claim additional credit for new program improvements specifically designed to eliminate potential problem areas. In response to increased advocacy for equivalent credit for test and repair programs, the marketplace has developed a number of vehicle verification and fraud detection tools which would preclude any facility from performing a compromised test.

Fourth, I'd like to offer a new approach to conflict resolution surrounding clean air issues. Important factors and decisionmaking are the computer models on which we all rely and about which we sometimes have substantial disagreements. Given the importance of these models, thought should be given to creating a group consisting of State representatives and EPA senior officials which would have the ability to make binding decisions on the components of the models.

Finally, I doubt EPA is the best agent to change the legal regime surrounding I/M. Therefore, we in Virginia believe that Congress

should reopen the Clean Air Act Amendments and make changes to the statutory foundation underpinning this program.

Mr. Chairman, we are committed in Virginia to improving air quality and have demonstrated this, but we need legislative relief from regulatory obstacles that prevent us from pursuing this goal. It was reported that one of EPA's principal staffers on this issue has acknowledged that if we could turn back the clock, it is obvious EPA would redesign its program. Well, we can turn back the clock and redesign the program and we encourage you to do just that.

Thank you for this opportunity to appear before you today. We look forward to working closely with you and searching for ways to improve the Clean Air Act.

[The prepared statement of Peter W. Schmidt follows:]

STATEMENT OF PETER W. SCHMIDT, DIRECTOR, DEPARTMENT OF ENVIRONMENTAL QUALITY, COMMONWEALTH OF VIRGINIA

I. INTRODUCTION

Thank you Mr. Chairman and Members of the Subcommittee for inviting me to present testimony on automobile emissions inspection and maintenance.

Virginia and a growing number of states across the country believe that the Clean Air Act is way off-course. The federal bureaucrats administering the Act—mainly the EPA—are wrong-headed in their mandates of one-size-fits-all prescription for clean air—to the detriment of our citizens, jobs, and, frankly, to the goal of clean air.

Before I continue, let me state in very clear language that like most Americans I am for clean air. The question that is ripe for debate is how best to achieve improvements in air quality and the need for practical, reasonable, cost-effective, science-based approaches. I would argue that much intellectual energy which could be focused on improving air is diverted to mindless paperwork exercises to assure that bureaucrats have jobs.

The regulatory structure of the Clean Air Act serves neatly as a microcosm of most environmental regulatory structures: Congress passes a well-meaning, but nebulously drafted law; EPA begins to promulgate regulations, which at first are only complicated and poorly drafted, but which over time become progressively more detached from the intent and language of the original statute (as well any common sense approach); and finally, states, businesses, and citizens are left trying to decipher and implement the maze of law and regulations in a time frame that fails to consider interim changes in site and situation specific circumstances and the continually changing regulatory regime.

Ultimately, the only remedy left is to attempt to relegislate the issue—the Hydra-like regulations are impossible to untangle and it becomes apparent that the law is not working toward its stated goals.

This is the stage at which we presently find ourselves with respect to the Clean Air Act Amendments of 1990, especially as they pertain to automobile emissions inspection and maintenance programs.

II. PROBLEMS

To be succinct, we believe that there are several defects with EPA's approach to I&M which have rendered the program unworkable in its current form.

Public Acceptance

First, is the program's lack of emphasis on the most important element of any program involving the public—public acceptance. In its 11/5/92 rulemaking, EPA stressed the important relationship between public approval and convenience; each is necessary to assure the success of any automobile emissions inspection and maintenance program. They stated crisply and correctly that "I/M programs need to be accepted and supported by the public to be successful; therefore, public inconvenience associated with I/M programs needs to be minimized." 57 Fed. Reg. No 215 at 52959. This prediction was on target (as events in Maine, Pennsylvania, Texas, and Maryland have shown); it is unfortunate that EPA did not attempt to build a program around this recognition. As states have moved from planning to implementation, the ping-pong effect, problems associated with purge and pressure testing,

the extreme cost of laboratory-grade equipment, and other practical difficulties have begun to shift public focus away from clean air and to the defects of the EPA-created I/M-240, centralized, test-only approach.

Many states have long shared EPA's initial understanding that public support is the only method for achieving compliance with programs, such as I/M, that affect large segments of the public. Conversely, loud threats of punitive measures and sanctions breed both resentment and tend to confirm a general and growing belief among the public that the program must be significantly flawed. Very few people have to be bullied into doing what they believe to be right.

In Maine, the program was terminated after only two months of operation due to a stunningly obvious lack of public support. Was the lesson learned? Not really. In assessing the flaws of the program, EPA concluded that the citizens had not been properly educated about the program. No thought was given to the hypothesis that perhaps the program was poorly designed. The citizens didn't need to be propagandized—they needed a system that worked for them, not against them.

In addition to mentioning test frequency as "the single most significant factor influencing I/M convenience", EPA added "cost, driving distance, certainty of service, hours of operation, wait times, and necessity for multiple trips" as "other influential features" that affect public acceptance of the program. 57 Fed. Reg. No 215 at 52959. Given this criteria (which we believe is valid), we are unable to comprehend EPA's conclusion that a centralized test-only system is the best in all places and at all times. Simply put, for many states, Virginia among them, a test-and-repair program is the only program that will generate the public support necessary for program success.

EPA was obviously aware of the warning signs, but simply refused to heed them. In their rulemaking, for example, one of the essential criteria mentioned by EPA was the avoidance of multiple trips. Yet EPA itself recognized that, "centralized programs necessarily require owners of failed vehicles to make an extra trip to obtain repairs... while [a]t the stations that do have an engine/emission repair capability, the vehicle may be able to complete the test-repair-retest process in one trip." 57 Fed. Reg. No. 215 at 5295960. On this point, EPA has indicated that they expect a 40 percent rate of repair failure, which would of course involve a second repair and then a third test. With respect to the driving distance criteria, EPA stated that "[t]he station-to-vehicle ratio... in service station based networks is typically on the order of 1 to 1,000," while the ratio in centralized networks "is about 1 to 35,000". Fed. Reg. No 215 at 52959.

The Use of Past Performance

Despite all this, and despite likely public concern over yet another function being absorbed by government bureaucracy, EPA decided to move ahead with centralized testing. In the rulemaking, they stated emphatically that, "it is not possible for a decentralized test-and-repair program to meet the performance standard for enhanced I/M regardless of the test type or vehicle class coverage." 57 Fed. Reg. at 52959.

In the CAAA, Congress directed EPA to "provide the States with continued reasonable flexibility to fashion effective, reasonable, and fair programs for the affected consumer." 42 U.S.C. 7511a(a)(2)(B)(ii). Congress clearly envisioned that some states would adopt decentralized test-and-repair systems when it stated in the Act that states were to be provided an opportunity to "demonstrate te the satisfaction of the Administrator that a decentralized program will be equally effective" as a centralized system. But even before any demonstration was attempted, EPA undercut this Congressional intent by pronouncing that:

> EPA believes it could not accept any of the currently operating decentralized systems as equally effective to centralized. With these effectiveness losses, it is not possible for a decentralized test-and-repair program to meet the performance standard for enhanced I&M, regardless of the test type or vehicle class coverage. 57 Fed. Reg, at 52959.

After announcing that it could not accept any of the currently operating decentralized programs as equally effective to centralized, EPA closed the noose by making "past performance" the only method by which equivalency could be judged. In other words, even before anyone got to demonstrate anything, EPA had already determined that they would fail based on past performance.

Credit Discount

I will not extensively address EPA's decision to impose a 50 percent penalty on all test-and-repair networks. This issue is critically important to Virginia, along with a host of other states. You have heard or will hear testimony from California

about the defects in the data and assumptions that underlie EPA's conclusion. We have had the chance to look at some of the California data. Frankly, we find it to be much more convincing, and a much more accurate reflection of the real world than the EPA data we've been subject to on I&M.

You have also no doubt heard much recently about EPA's attempts to grant the states flexibility in implementing I&M programs. EPA's effort is welcome, but it is a day late and a dollar short. EPA remains steadfast in denying one of the most important elements the states want—full credit for the test-and-repair option. By adhering to its ill-conceived 50 percent discount for test-and-repair programs, EPA continues to effectively foreclose this option. The bottom line is simply this—test-and-repair appears to be at least among the most favored approaches by significant fractions of the population of the largest states in the Union. California, Pennsylvania, Texas, perhaps even New York and Massachusetts, might proceed expeditiously with a program if the discount were lifted. By keeping it, EPA thwarts the will of the people in many states and ignores the will of the Congress as expressed through the Clean Air Act Amendments of 1990.

III. SOLUTIONS

How should the statutory and regulatory framework of the CAAA be changed to accommodate state's needs and the imperative to design a I/M program which our citizens will find acceptable and state governments will be able to administer?

First, and most importantly, the generic 50 percent discount should be eliminated. If EPA believes that a specific program is deficient, it should be compelled to prove that it is and to demonstrate the extent to which it is deficient. As it currently stands, the states must approach EPA as supplicants, hoping that their programs will be granted equivalency. We in Virginia don't think that it is the way it ought to be done. We're sure that our citizens don't want things done that way either.

The default credit assignment encoded in the MOBILE model should be 100 percent, and only when EPA can prove that an individual program deserves less, for reasons unique to that program, should less than 100 percent credit be assigned. In changing the law to reflect this belief, we should remain cautious of the overall attitude of EPA—that the burden is on the states to prove their worthiness. That paradigm should be reversed—it ought to be assumed *a priori* that the states and their citizens will do the right thing. The burden of proof ought to be placed squarely on EPA to demonstrate that a program is defective, its participants negligent, and the citizens accomplices. Moreover, such a demonstration should be judicially reviewable.

Given the advances in quality assurance and control technology, we believe that EPA should amend the inspection and maintenance regulations in 40 CFR 51 Subpart S to encourage states to develop programs employing a test-and-repair network which meet the total mobile source emission reduction goals outlined in the CAAA. In cases where EPA challenges the adequacy of a state's program, the final determination should include, but not be limited to, test type, deterrence measures, detection measures, enforcement measures, and compliance rates.

After experience with EPA, we believe that all changes should be placed in the Code. At a minimum, the language in the amended final rule at Section 51.353(b)(1) and (2) should be reamended as follows:

> (b) *Provisional Eguivalency.*—(1) Enhanced I/M areas may choose to implement a decentralized, test-and-repair network and shall be granted presumptively equivalence. EPA shall bear the burden of demonstrating that such a program does not deserve to be considered presumptively equivalent. If EPA makes such a demonstration, which shall be judicially reviewable, the state in question may submit a plan meeting the requirements of this paragraph.
>
> (2) *Test-and-Repair Evaluation.*—The SIP shall include a commitment to submit to EPA an assessment of the program which includes, in part, the evaluation testing required in Section 51.353(c) as well as compliance reports, deterrence reports and any other information which the State believes to be necessary for EPA to properly evaluate the program.

Second, states should be allowed in future programs to take credit for all enhanced program design elements which were not present in the basic test-and-repair programs previously extant. EPA rules ostensibly provide the ability to demonstrate equivalency of test-and-repair systems by providing:

> Better surveillance, more rigorous enforcement and the like will reduce the egregious levels of improper testing found in these programs... Therefore, EPA will consider SIP submissions designed to demonstrate that decentral-

ized, test-and-repair programs are equally effective to a centralized program in meeting the performance standard by using the criteria established for case-by-case equivalency. 57 Fed. Reg. at 52959.

However, the case-by-case equivalency section continues with the statement that "smaller *reduction in credits* for the various test protocols may be claimed if a state can demonstrate... that based on *past performance* with the specific test type and inspection standards employed, its test-and-repair system will exceed those levels" (emphasis added).

In the rule, EPA only allows states to seek an equivalency designation by using its past test-and-repair performance. The rule does not take into account new program features mandated by EPA which will improve both centralized and decentralized programs. For example, EPA has emphasized the integrity of automation; the rule requires the same automation for the new enhanced programs for both centralized and decentralized sites.

The rule also requires items such as real-time data linkage, enhanced enforcement mechanisms, increased program auditing, inspector training and licensing (which we have been doing for some time in Virginia), repair training, waiver issuance limitations, roadside inspections and on-going program evaluation. Even though EPA has included these elements as necessary enhancements to the system, it refuses to recognize that they will improve test-and-repair programs beyond past performance levels.

The existing MOBILE models do not assign credit for these elements, assuming that they will only have a value-added effect in a test-only environment, and will, for some ill-defined reason, have no similar effect in a test-and-repair program. This assumption—that such elements would have no positive effect in test-and-repair programs—implies that these federally mandated improvements are simply costly regulatory hurdles imposed by EPA on the states with literally no regard to whether they provided environmental benefits.

If EPA can conclude, as they have done, that these improvements have value in centralized programs, they should be able to calculate the benefits that these improvements will have on decentralized programs. By looking only to the future to judge centralized programs and only to the past judge decentralized programs, EPA has aggravated the inherent defects of the 50 percent discount for test-and-repair programs.

Third, states should be able to claim additional credit for new program improvements specifically designed to eliminate potential problem areas. The CAAA identify that both "an electronically connected testing system, [and] a licensing system" are requisite for any demonstration of test-and-repair equivalence. In response to increased advocacy for equivalent credit for test-and-repair programs, the marketplace has developed a number of vehicle verification and fraud detection tools which would, in large measure, preclude any facility (either test-only or test-and-repair) from performing a compromised test. Private industry has developed a photo-based monitoring system, which, when integrated with emissions analyzers, produces a visual link to a particular vehicle and emissions test. A still image can be randomly captured over the course of the inspection. In addition, the software for this system can detect whether the vehicle on the dynamometer is indeed the one being tested and shut down the test if the analyzer probe is removed from the tailpipe before a full reading can be conducted. This precludes the technician from analyzing the wrong tailpipe.

In short, public demand for the increased convenience of the test-and-repair networks has provided adequate incentive to the marketplace to develop solutions to problems presented by earlier generations of testing systems. It can be expected that other technological advances will emerge in the near future. EPA has reviewed these developments with industry representatives and indicated that it would provide additional credit for these advancements. Yet, its most recent document describing additional flexibility for states still contains no additional credit for these technologies. There ought to be such credit.

Fourth, I'd like to offer a new approach to conflict resolution surrounding clean air issues. For too long, EPA has enjoyed the virtually unfettered ability to drive the regulatory regime in whichever direction it chooses. Important factors in this control are the computer models on which we all rely, and about which we sometimes have substantial disagreements. I believe, given the importance of these models, that some thought should be given to creating a group, consisting of state representatives and EPA senior officials, which will have the ability to make binding decisions on the components of the models.

Finally, it appears to be exceedingly unlikely that EPA, which has clung tenaciously to the 50 percent discount, will be willing not only to abandon it, but to also

accept the burden of demonstrating that individual programs ought not be granted presumptively equivalence, is the best agent to change the legal regime surrounding I&M. Therefore, we believe that Congress should reopen the CAAA and make changes to the statutory foundation underpinning this program.

IV. CONCLUSION

Mr. Chairman, we in Virginia are committed to improving air quality and have demonstrated this, but we need legislative relief from regulatory obstacles that prevent us from pursuing this goal. As even one of EPA's principal staffers on this issue acknowledged, "If we could turn back the clock, it is obvious EPA would redesign its program." Gene Tierney, EPA Motor Vehicle Emission Laboratory as reported in BNA California Environment Reporter Vol. 5, No. 7, pg. 108. Well, we can turn back the clock and redesign the program, and I encourage you to do just that.

Thank you for this opportunity to appear before you today. We look forward to working closely with you in searching for ways in the Clean Air Act may be improved.

Mr. BARTON. We thank you for your testimony. Did the State legislature know when they passed the decentralized bill that Governor Allen was in favor of it?

Mr. SCHMIDT. They did, indeed.

Mr. BARTON. And they still passed it by unanimous consent.

Mr. SCHMIDT. They did, indeed.

Mr. BARTON. That's good. We'd now like to hear from Mr. Joe Belanger, who is the Director of Planning and Standards, Bureau of Air Management, the Connecticut Department of Environmental Protection. Mr. Belanger.

TESTIMONY OF JOSEPH BELANGER

Mr. BELANGER. Thank you, Mr. Chairman. I am the Director of Planning and Standards for the Air Management Bureau in Connecticut and I've been involved in the clean air business only for 3 years. So I don't have some of the history that other people have on these programs. But I'm happy to be here today to share our view of the I/M program.

From my perspective, sometimes I'm not sure that we're talking about the same program. To summarize my testimony, I want to touch quickly on two things—why we think the programs are key to achieving our air quality objectives and a brief assessment of where we think our current program that we've run for 12 years has taken us and what our expectations are for the new program that we expect to implement on April 3. So we're only about 10 days away from an important date, obviously.

Third, what I'd spend more time on is I would like to talk about how we've taken advantage of what we think is the existing flexibility in the program that EPA has offered to design what we believe is actually going to be the most consumer-friendly and one of the more cost-effective I/M programs in the country.

We intend to meet the high performance standard that EPA Assistant Administrator Nichols talked about earlier this morning and we intend to do that with a program that costs exactly what our 12-year-old program costs, $10 a year or $20 for a biannual inspection.

When you look at motor vehicle emissions in Connecticut and much of the urbanized northeast, it becomes very clear that we're relying more and more on using high technology applications to

motor vehicle controls to bring air quality within the limits that we need to bring it. We don't have many options.

VOC emissions from major industrial stationary sources in Connecticut I believe are around 7 percent of our total VOC emissions. When you look at the ozone-related pollutants, we're in the range of 19 percent of those emissions coming from stationary sources. And motor vehicles, particularly in the New York metropolitan area, really just have to be addressed.

Now, when you start to deal with things like the 49 State car and California emission standards, the interaction of the inspection and maintenance systems to the long-term performance of those vehicles becomes very important. So making sure that we integrate all of these motor vehicle strategies to bring us the kind of emission reductions we need to make the air quality standards is very important.

We have been successful in solving the carbon monoxide problem with our current I/M program. As a good piece of that, we have reduced the incidents of ozone exceedances from the 60's in the 19—60 days per year, plus in the 1983 period to 9 days last year in Connecticut on the carbon monoxide front.

We have essentially eliminated carbon monoxide violations throughout the State and we've been able to abandon the program for oxygenated gasoline in a fair portion of the State and we're hoping to reduce the requirement in the New York City area as soon as we can come up with an integrated plan with those States.

The benefits of this program, I think, have been documented in many ways, but one of the things we were able to do is we can track cars. We've had a centralized I/M program from the get-go in Connecticut. So I think that's responsible for much of the difference between what we perceive and what other States are experiencing as they move forward here.

We've gotten to the point where people expect to bring their cars to a centralized station. We've not had a problem with respect to the nature of bringing your car there. The things that have been raised as we've moved to this new program, which is going to be about 50 percent more effective than our earlier program, is the concern over the $450 waiver that was spoken about earlier on this panel.

The concern over repair costs is another big issue and we've done some things to do that. And, of course, the queuing and lines at the stations which are related to number of failures and so forth was sort of the third area where we were, in fact, concerned that we would have to deal with an angry public. What we've done is we've been able to take the flexibility that EPA has provided us. We've taken the $450 and phased that in. So we're going to be dealing with $250 repair waiver costs for the first phase, first 2 years of the program.

We've had an effective enough program design that we believe we can exempt some of the older cars that are really more properly dealt with under the basic idle type testing. They come in on an annual basis and we're going to be providing a $125 waiver requirement for that. It's up from the current $40.

We are very concerned that people would be upset with people tinkering with their car under the prescribed original I/M test pro-

cedures and the nature of opening up the hood and disconnecting and possibly breaking connections on the vapor lines and so forth was quite troublesome for us to think about.

And working with some Connecticut companies and others, we've designed and are implementing a helium tracer gas system that will test the purge system in the car, will test the gas cap separately. I drove my car through the program last week just so I could see what it looked like and see how fearful would be when they leave their car with a driver and put it on this treadmill.

They don't raise the hood of the car. You watch——

Mr. BARTON. This is the vaunted I/M240 test that we've heard so much about.

Mr. BELANGER. This is the I/M240 test, yes.

Mr. BARTON. So you're now using it in Connecticut.

Mr. BELANGER. We are implementing it officially on April 3.

Mr. BARTON. And try to summarize. You're not from Georgia, you can talk fast from Connecticut.

Mr. BELANGER. We think we've got a good program. The other piece of this is the repair ping-ponging that was talked about this morning. And attached to my testimony is a copy of the vehicle inspection report. We expect to provide a lot of diagnostic information. We're providing second-by-second traces of all of the gas emissions as compared to what a normal vehicle would be. We're going to put a database together that will allow a technician to compare a history of cars that had that kind of pattern with repair fixes which will be reported and recorded in a database, so that they can correlate these and target in on what needs to be done.

We're optimistic that we're going to be able to have a smooth start on this program. We've done some rescheduling to make sure we don't have lines. But we think it's a good program. We've got general support for it throughout the business community, which is—it didn't fail, as it has in other places, apparently, and we're looking forward to starting up. We think it's going to be a very effective program to reduce emissions.

Thank you, Mr. Chairman.

[The prepared statement and attachments of Joseph Belanger follow:]

STATEMENT OF JOSEPH BELANGER, DIRECTOR OF PLANNING AND STANDARDS, BUREAU OF AIR MANAGEMENT, CONNECTICUT

Mr. Chairman and members of the Subcommittee. Good morning. My name is Joseph Belanger and I am Director of Planning and Standards at the Connecticut Department of Environmental Protection's Bureau of Air Management. In that capacity, I have responsibility for the Department's involvement in Connecticut's Vehicle Inspection and Maintenance Program. I am pleased to be here today to share with the subcommittee Connecticut's view of the Enhanced vehicle Inspection and Maintenance (I/M) program. I will address how we perceive the program in terms of effectiveness in achieving the emissions reductions necessary to achieve the National Ambient Air Quality Standards (NAAQS) and how the program fits into an integrated set of plans dealing with several requirements of the 1990 Clean Air Act Amendments. Finally, I will discuss the approach that Connecticut has taken, utilizing the flexibility, that we expect will be included in the revised Federal rules on the Enhanced I/M program, to create and implement what will be a cost efficient and consumer friendly program while still achieving the impact necessary to meet the emission reduction targets initially determined by the EPA's performance standard, but now a vital portion of our rate of progress plans and attainment strategies.

Connecticut is interested in effective I/M programs from two perspectives. We view Enhanced I/M as one of the most effective program elements in our emission

reduction plans, and we also view it as likely to be necessary in adjacent upwind areas if those areas are to reduce transported pollutants to the levels necessary to allow us to attain the NAAQS as envisioned in Section 110 of the Clean Air Act. Frankly, we believe that every reasonable program, many more costly than I/M, will be required to meet both of these goals.

Recognizing that emissions from motor vehicles are a significant contributor to air pollution, emission reduction strategies targeting motor vehicles are critical to the effort to improve air quality and achieve the NAAQS. In 1990, motor vehicles accounted for over 29 percent of the volatile organic compounds (VOC), 48 percent of the nitrogen oxides (NO_x) and 65 percent of the carbon monoxide(CO) emitted by man-made sources in Connecticut. The Enhanced Inspection and Maintenance program is a key component of the State's effort to control these omissions by ensuring that pollution control equipment installed in cars is properly maintained. This function grows in importance as we increase our reliance on additional levels of automotive controls to offset the effect of ever increasing vehicle miles of travel associated with growth in economic activity.

We believe that the current emissions program has been a contributing factor in reducing the number of days that the State exceeds the ozone health standards—down from 62 days in 1983 to 26 days in 1987, and to just 9 days in 1994. Connecticut initiated a statewide basic Inspection and Maintenance (I/M) program on January 1, 1983. This program covered all model year 1968 and newer gasoline-fueled vehicles up to 10,000 pounds gross vehicle weight. The Connecticut I/M program has contributed significantly to a reduction in tailpipe emissions over the past 12 years. Currently, the basic I/M program in Connecticut reduces CO by about 100,000 tons/year and VOCs by about 5,700 tons/year. The basic I/M program consisted of an annual idle test measuring tailpipe concentrations of carbon monoxide (CO) and hydrocarbons (HC). We believe that its effectiveness was largely a function of its centralized, test-only design.

Last year, 1,890,000 vehicles were tested and the overall failure rate was only 7 percent. In 1983 when the program first started there were 1,874,500 vehicles tested and an overall failure rate of 17 percent. We anticipate that the overall failure rate for the enhanced program will be around 10 percent.

The early data collected showed that the average emissions over the entire fleet were well below the emission standards. Only a small portion of vehicles were gross polluters in 1983 and, through the years, this portion of vehicles has been reduced. The average cost of repairing failed vehicles has been estimated at about $110. In Connecticut most residents have become accustomed to the basic I/M program. While we do not receive very many complaints about the current program, any change raises questions and concerns, and the introduction of the new enhanced program is no exception.

Connecticut has adopted as its enhanced program, the Inspection/Maintenance 240 (I/M 240) approach. We believe that this 240 second transient test performed on a dynamometer will be much more effective in testing the computer-controlled and fuel-injected vehicles driven today. The I/M 240 test is run with a gas analyzer attached to the tailpipe while the vehicles are run on a simulated trip on a dynamometer that will impose a load simulating road friction and wind resistance. The car will go through a series of accelerations and decelerations to mimic typical driving. The emissions are measured throughout the entire driving cycle.

The enhanced test will also check for leaks in the vehicle's fuel and vapor control system, since problems with those systems account for more than half of all excessive hydrocarbon emissions. In addition, diesel vehicles up to 10,000 lbs gross vehicle weight will be tested for opacity. I should note that the 10,000 lbs gross vehicle weight limit capitalizes on investment in testing instruments by going beyond the EPA required weights to gain additional omissions reductions necessary for us to meet our goals.

On April 3rd, we will implement the switch over to an Enhanced I/M program. The enhanced program will maintain the centralized, test-only system. We have, however established a biennial schedule for most cars while keeping the annual idle only test for pre-1981 vehicles. We are convinced that centralized test-only programs are much more effective programs than those of a decentralized nature. Centralized programs help insure that all standards are uniformly met, and that garages are not allowing false passes or requiring unnecessary repairs. Overall we feel the consumer experiences a fairer test with more accurate sensors and a more realistic testing methodology.

Turning to the subject of emission reductions, we firmly believe that centralized prc ıms deserve substantially greater emission reduction credit in State Imple- ation Plans.

We feel that the discount applied to non-centralized programs by EPA is warranted, in that it reflects the real differences of these programs as compared to decentralized efforts.

As I mentioned earlier, the centralized enhanced I/M program is a key part of our effort to reduce emissions in Connecticut. With respect to ozone, our biggest air quality concern, it is a critical component of our 15 percent Reasonable Further Progress State Implementation Plan for 1996 and will be part of reasonable further progress plans and attainment demonstrations currently being prepared for 1999 and 2007. Because we have extended the centralized Enhanced I/M to areas of the state where it was not required, it has also allowed us to opt out of the Clean Air Act mandated Clean Fuel Fleet Program. On the Carbon Monoxide front, it plays a key role in our ability to demonstrate that we will stay in compliance with the standard. We estimate that the Enhanced I/M program will initially lower Connecticut's vehicle caused air pollution by 301 tons per day(tpd) (30 tpd VOC, 254 tpd CO and 17 tpd NO_x). It is also one of the most cost effective emission reduction strategies, at about 10 percent of the cost of additional reduction requirements on other sources.

Finally, even though we have 12 years' experience with the centralized program, we are concerned about consumer acceptance and have gone to some length to ensure a smooth implementation of this program. EPA's expressed flexibility has allowed us to take several steps to ease the transition from the current idle only test to the enhanced program. We will phase in the $450 waiver starting with a $250 limit for the first two year cycle.

We will also use a non-intrusive purge and pressure test which will eliminate the need to disconnect fuel or vapor lines. Less stringent cut points, or standards will be used for the first test cycle. In addition, a number of improvements to the present testing facilities will be implemented. These include increasing the number of testing lanes from 49 to 92, increasing the number of testing sites from 19 to 26, and increasing the operating hours from 45 to 60 per week. We also are providing a bright, clean, enclosed area where the vehicle owner can watch the test in progress and view the same trace that the test operator uses for the 240 second simulated drive. We have accomplished all of this while still maintaining a cost for the program that is equal to that of the 12 years ago, $20 per biennial test as compared to $10 per annual test. In addition, we will be providing substantial diagnostic information to owners of vehicles that fail. This information, combined with an extensive repairer training and registration program, is expected to minimize repair problems.

An active public informational effort including newspaper ads and radio announcements has also been initiated. We believe these steps along with personalized scheduling designed to "limit" lines during the earliest part of the program, will minimize the inconvenience to the public and result in an environmentally beneficial program that will be acceptable to the citizens of our state.

In summary, we believe that the enhanced vehicle inspection and maintenance program is an extremely important, cost efficient program. It necessarily targets a major source of pollution, the motor vehicle, and it plays a critical role in our efforts to provide healthier air in the immediate future and ultimately to attain and maintain the National Ambient Air Quality Standards. We also believe that the anticipated revision in EPA rules will assure that states can develop workable Enhanced I/M programs while maintaining their air quality objectives.

Thank you for the opportunity to appear before you today. I would be pleased to answer any questions that the committee may have.

CONNECTICUT Working Together CLEAN AIR

STATE OF CONNECTICUT

VEHICLE INSPECTION REPORT

THIS REPORT IS REQUIRED TO RECEIVE A FREE RETEST

Thank you for your participation in Connecticut's new enhanced vehicle emissions program.

Your vehicle test results are shown below. Pursuant to Sec. 14-164c of the Connecticut General Statutes, your vehicle was inspected for exhaust emissions using the latest technology. If the result was PASS, the new sticker on the vehicle's windshield shows the last day you may come in for your next test. Note you may come in up to 90 days in advance of that due date. If the result was FAIL, the law allows 30 days to accomplish repairs and return (with the repair information on the reverse side of this form completed and signed by the repairer) for one free retest.

After 30 days, it will cost $15 or $30 to have your vehicle retested. Appropriate test fees also will be charged if you lose your initial FAIL VIR. Connecticut General Statutes require motorists more than 30 calendar days overdue for their initial test to pay an additional $10 late fee.

VEHICLE TEST SUMMARY

Date	Station	Lane	Customer	Start Test Time	End Test Time	Wait Time

VIN	Odometer	Insurance	Inspection Date	Reg. Expiration	Test Number

Plate	Class Code	Make	Vehicle Type	Year	Tax Town	Fuel	Test Type

	HC	Measured in Parts per Million	CO	Measured in Parts per Million	NO_X	Measured in Parts per Million	HC	Measured in Parts per Million	CO (%)	%
Maximum Limits										
Test Readings										
RESULTS										

Test Duration in Seconds:

Possible causes for emissions failures listed in accompanying reports.

	Catalytic Converter	Fuel Cap	On Board Diagnostics			
				Maximum Limits		
RESULTS				RESULTS		

Understanding Your Vehicle Inspection Report

Idle mode testing applies to 1984 through 1993 model year vehicles and certain other vehicle types. This test measures hydrocarbon (HC) & carbon monoxide (CO) levels when at idle speed. Enhanced emissions inspection applies to 1995 and newer vehicles. This procedure measures HC, CO and oxides of nitrogen (NOx) levels while the vehicle is being tested on the dynamometer at variable speeds. This simulates real-world driving conditions. Also, pertinent vehicles will be checked for required emissions components and the integrity of the vehicle's fuel vapor containment system.

REPAIR DATA FORM

This form must be used by the technician to indicate what repairs were performed on a vehicle that has failed an emissions test. Place one "X" per item in the box to indicate which component has been (A) checked and is OK, (B) has been repaired, (C) replaced or (D) repairs were recommended but not performed. Mark only ONE BOX per item. Do not mark boxes for items you did not check. The vehicle is entitled to one free retest provided (1) the vehicle is retested within 30 days of its initial fail date and (2) this completed and signed Vehicle Repair Data Form is presented at the time of re-inspection.

	CHECKED OK	REPAIRED	REPLACED	SUGGESTED BUT NOT REPAIRED
FUEL SYSTEM REPAIRS				
AIR FILTER	1A	B	C	D
FUEL FILTER	2A	B	C	D
VACUUM LEAKS	3A	B	C	D
FUEL LEAKS	4A	B	C	D
GAS CAP	5A	B	C	D
FUEL TANK	6A	B	C	D
IDLE SPEED CONTROLS	7A	B	C	D
CARBURETION				
CARB ADJUSTMENT	8A	B	C	D
OTHER CARB. REPAIRS	9A	B	C	D
CARBURETOR MECHANICAL	10A	B	C	D
CHOKE ELECTRICAL	11A	B	C	D
TAC	12A	B	C	D
IAC SOLENOID	13A	B	C	D
FUEL INJECTION				
PRESSURE REGULATOR	14A	B	C	D
THROTTLE BODY	15A	B	C	D
FUEL DISTRIBUTOR	16A	B	C	D
INJECTOR(S)	17A	B	C	D
COLD START VALVE	18A	B	C	D
WARM UP REGULATOR	19A	B	C	D
OTHER	20A	B	C	D
EMISSIONS SYSTEM REPAIRS				
EVAPORATIVE CANISTER SYSTEM				
VACUUM ROUTING	21A	B	C	D
VALVE	22A	B	C	D
FUEL CAP	23A	B	C	D
ELECTRICAL	24A	B	C	D
CANISTER	25A	B	C	D
EGR SYSTEM	26A	B	C	D
VACUUM	27A	B	C	D
VALVE	28A	B	C	D

	CHECKED OK	REPAIRED	REPLACED	SUGGESTED BUT NOT REPAIRED
EMISSIONS SYSTEM REPAIRS (CONT.)				
PASSAGES	29A	B	C	D
ELECTRICAL	30A	B	C	D
AIR INJECTION SYSTEM				
BELT	31A	B	C	D
PUMP/VALVES	32A	B	C	D
PLUMBING	33A	B	C	D
ELECTRICAL	34A	B	C	D
VACUUM ROUTING	35A	B	C	D
OTHER	36A	B	C	D
PCV VALVE				
VALVE	37A	B	C	D
OTHER	38A	B	C	D
CATALYTIC CONVERTER	39A	B	C	D
IGNITION SYSTEM REPAIRS				
COIL/COIL PACKS	40A	B	C	D
DISTRIBUTOR	41A	B	C	D
ROTOR CAP	42A	B	C	D
TIMING	43A	B	C	D
MODULES	44A	B	C	D
SPARK PLUGS	45A	B	C	D
SPARK PLUG WIRES	46A	B	C	D
SECONDARY LEADS	47A	B	C	D
OTHER	48A	B	C	D
ELECTRICAL SYSTEMS REPAIRS				
BATTERY	49A	B	C	D
ALTERNATOR	50A	B	C	D
WIRING				
BROKEN WIRES	51A	B	C	D
FRAYED CONNECTIONS	52A	B	C	D
SHORTED	53A	B	C	D
OTHER	54A	B	C	D

	CHECKED OK	REPAIRED	REPLACED	SUGGESTED BUT NOT REPAIRED
ELECTRONIC ENGINE CONTROLS REPAIR				
EMC PROM	55A	B	C	D
MEMORY RESET	56A	B	C	D
SENSORS				
O2	57A	B	C	D
TEMPERATURE	58A	B	C	D
AIR FLOW	59A	B	C	D
THROTTLE POSITION	60A	B	C	D
RPM/TACHOMETER	61A	B	C	D
KNOCK	62A	B	C	D
VEHICLE SPEED	63A	B	C	D
MASS AIR FLOW	64A	B	C	D
EVAP PURGE FLOW	65A	B	C	D
SPARK CONTROL	66A	B	C	D
EGR CONTROL	67A	B	C	D
MAP	68A	B	C	D
AIR CONTROL	69A	B	C	D
OTHER	70A	B	C	D
MECHANICAL ENGINE REPAIRS				
MANIFOLDS	71A	B	C	D
TURBO/SUPERCHARGER	72A	B	C	D
VALVES	73A	B	C	D
VALVE TIMING	74A	B	C	D
BYPASS GASKETS	75A	B	C	D
CRANK CASE OIL	76A	B	C	D
MOTOR MOUNTING	77A	B	C	D
OTHER	78A	B	C	D
COOLING SYSTEM REPAIRS				
THERMOSTAT	79A	B	C	D
RADIATOR	80A	B	C	D
FAN	81A	B	C	D
ELECTRICAL	82A	B	C	D
COOLANT	83A	B	C	D

Repairer Must Complete This Section

Repair Date: ___ / ___ / ___

Are repairs warranty or recall-related? ☐

Repaired by vehicle owner? ☐

- Emissions-related Parts Costs $ ____.00
- Emissions-related Labor Costs $ ____.00
- Emissions-related Miscellaneous Repair Costs $ ____.00
- **Total Emissions-related Repair Costs** $ ____.00

- **Technician Registration Number**
- **Repair Facility Name**
- **Repair Facility License Number**
- **Print Name of person performing repairs**
- **Signature of person performing repairs**

are transcending out of our inspection stations, and we will have some of the kind of correlatable data that was discussed this morning to be added to the discussion on this.

So to the extent that it can be plugged in as an ancillary kind of activity as opposed to replacement, we would be strong supporters of that.

Mr. BARTON. Any other comments?

Mr. SCHMIDT. Like any new technology, the product is not mature. But we believe, given time, that the market will drive it to being an efficient model for accuracy and we believe that, with time and improvement, that it will be one of the cornerstones hopefully of our program in the Commonwealth of Virginia.

Mr. BARTON. Does anyone else want to comment on that? Mr. Horn?

Mr. HORN. I'd like to comment that I think, quite frankly, I have reached the conclusion that that's the only answer there is that's acceptable. We could run every car through it 50 times cheaper than what we're doing and the public would accept it and then don't fine them and put them in jail. Help them fix their car.

Mr. BARTON. I'm going to yield to the gentleman from Oregon now.

Mr. WYDEN. Thank you, Mr. Chairman. I'll be brief. Question for you, Mr. Belanger. Your associates at the table have basically said that I/M is a horrible blight upon the land, a great scourge, great damage to our citizens. You all seem to have had a good program and I gather it's been bipartisan and you have a Republican Governor.

Having listened to this, why do you think you all have been successful and all your associates at the table seem to have had such objectionable experience?

Mr. BELANGER. I think it goes back to the fact that we all sort of crawl and then walk before we run. And in terms of jumping into a full-blown I/M240, high hurdle, waiver rate, all of these things put together at one point in time is—that's a different step than stepping from a program that's been run for 12 years, with some changes in the standards to tighten things over 12 years, and the moving from that existing centralized program into a centralized I/M240 program.

And we're using the same lanes. We're refitting the same lanes. People are going to be going to the same stations, for the most part. We're adding lanes to some stations, adding new stations eventually. But it is not a dramatic change in the environment that people are used to.

Mr. WYDEN. Let me, in the interest of time, just ask one question of you, Mr. Horn. We're all elected officials and up here we always talk about end users, whether it's telecommunications or autos or something. I prefer to call them voters and I suspect you do. We're all concerned about this ping-ponging issue and all these programs.

In your testimony, I noted that you talked about how you felt remote sensing would be less oppressive and you said people might get tested six times a year or something like that. My sense is that as this technology comes on-line, people might be tested a lot more than that. They might go through these things a couple of times a day.

And I guess I'm concerned about the prospect of additional ping-ponging under remote sensing. What are the safeguards we ought to have here with remote sensing to make sure that people don't constantly have to go for fix-it tickets or additional testing or go to a garage or something?

Under inspection and maintenance, they go once, once every year or once every 2 years or something. If we have problems with this remote sensing, people could be ping-ponging all about the countryside. I'm curious what you think would be appropriate in terms of safeguards so that our citizens, who are already pretty unhappy about all this, don't have to go through more ping-ponging and the like.

Mr. HORN. If I could design a program, one thing I would think of would be to—we have a police department in my State that sets up a radar gun and when you're speeding, it just flashes up on a digital screen that says you're speeding, and you'd be amazed what happens. People drive the speed limit and nobody gets a ticket. It's a wonderful program.

You could do that, to where a red light flashes when a guy goes by. I think our citizens are honest. I think they want clean air. I think the vast majority would probably get their car checked if you did nothing other than that. Maybe the third time you're checked, you send them a letter. Maybe if they're caught six times, then you can begin to enforce it.

It's not that big a thing. I think most people would want to fix their own car, that they'd want to do it with a mechanic they trust, not some bureaucrat running a machine.

Mr. WYDEN. I share your view that the vast majority of people are honest and they do want clean air. I think the question is whether this technology is up to it. I've told the chairman that I still haven't formulated a particular opinion on this. I want to see this data.

My concern is that if the technology isn't everything that Mr. Barton hopes it is, I don't want us to get into a situation where we've got even more hassle from a citizenry that's already pretty upset, as all of you have correctly noted.

I thank the gentleman.

Mr. BARTON. I thank the gentleman. The Chair is going to have to excuse himself to go catch the airplane to DFW Airport. We're going to turn the chairmanship over to Mr. Burr of North Carolina. He's got a series of questions and then he'll recognize the other members.

I want to, again, express my appreciation to each of you for being here and for staying through a very long series of hearings.

The Chair would now turn the chairmanship over to Mr. Burr of North Carolina.

Mr. BURR [presiding]. Thank you, Mr. Chairman. And I apologize for everybody's schedule today. You're very kind to come up and to testify. We have closed out some important business over in the Capitol this afternoon.

Let me pursue just a couple of things, if I can, and, if I could, ask for the questions to be as brief as you can. Let me just ask each of you.

Is your State interested in using remote sensors? Mr. LaValle?

Mr. LAVALLE. I suspect that in our State, we might be interested if we could clear up the confusion about what expert thinks what is going to work, we might be willing to accept a number of things. However, as I said just a short time ago, I'm not too sure the EPA, up until today or very recently, has allowed for much flexibility, even though they contend that they have.

I don't think that we would rule out anything in Pennsylvania as long as there is agreement on what works and what doesn't work, so that somewhere along the time, the people that we represent aren't being forced to go through a program that isn't going to clean the air any more than if we do nothing at all in the next 5 or 6 years.

Mr. BURR. Certainly an option, though. Mr. Horn.

Mr. HORN. I believe our position would be if our air is truly bad or if it's getting worse, then we would look at that, as we would any other program. But if our air is not doing those things, get off our back. We don't need anything.

Mr. BURR. Mr. Evans.

Mr. EVANS. The gentleman from Connecticut had mentioned a minute ago that some of the research is being done in Georgia. It's actually Georgia Tech and Dr. Mike Rogers who is spearheading that and they're one of the leading research groups on this remote sensing.

I think that we all realize that that has to play some part in this and that goes back to the clean for a day that we heard about earlier. If you know that in 2 months that you're going to be given a drunk driving test, then you're going to come sober. Now, obviously, that doesn't have a specific relationship to cars because I don't think people automatically, after they're tested, take the stuff off their car and then repair the car right before the next testing.

But I think it does go to the clean for a day aspect that was mentioned earlier.

Mr. BURR. Good. Mr. Schmidt.

Mr. SCHMIDT. Mr. Chairman, consistent with product performance and in the interest of serving our citizens best, we would certainly see this as an integral part, if not the core of our program.

Mr. BURR. Mr. Belanger.

Mr. BELANGER. We would love to see effective remote sensing play a substantial role and reduce the frequency with which we'd have to test in the long run or get better results from our current test program. We're certainly not opposed to the idea. We just don't want to introduce additional uncertainties and additional burdens before the technology is sufficiently proven.

Mr. BURR. Let me continue with you, if I could, Mr. Belanger. I just want to go to a statement in your remarks. Let me just read, "I will discuss the approach that Connecticut has taken utilizing the flexibility that we expect will be included in the revised Federal rules on enhanced I/M program to create and implement what will be a cost-effective and consumer-friendly program, while still achieving the impact necessary to meet the emissions reduction targets initially determined by EPA's performance standards."

Your statement, and I think it said "we expect," so I'll give you a little bit of doubt, is inconsistent with everybody other than the EPA who has testified in 2 days. Can you share with me what

makes you believe that that statement is, indeed, factual for Connecticut? I mean, I just heard——

Mr. BELANGER. That's the way our program was set up.

Mr. BURR. We just heard testimony from a mechanic who went to school for 120 hours at a cost to someone—I'm sorry I wasn't here to ask him whether it was out of his pocket, his company's pocket or the government's pocket—to find out that he couldn't make the equipment do what the equipment was designed to do.

So I don't know how we can have his opinion of it and your opinion be so far apart.

Mr. BELANGER. I can explain, Mr. Chairman, how we went about it. Before the EPA flexibility document, which was referred to this morning, was published, we realized that the $450 waiver fee was going to be burdensome. We realized we were going to have the probability of some lines, if we had some problems at the stations to begin with.

We knew we had to deal with some of these issues. We knew we didn't want to be tampering with people's fuel lines and vapor lines under the hood. And we basically proposed to EPA early on that there were equivalencies that could be determined. The timing of our proposals and EPA's flexibility seems to have come together.

The rulemaking isn't out. That's why I say we expect that these things are going to be approvable under the final revised rules. But our program is going ahead on that design. To the extent that we're taking a risk by installing that program, we're taking a risk and we understand that we haven't crossed that bridge yet. But we believe that we will be successful in prevailing with respect to using these approaches, to phasing in the program, and we're optimistic that they're going to solve many of the problems of consumer acceptance.

Mr. BURR. Just one final question. Mr. LaValle, I think we heard some testimony from one of our members earlier about some situations in Pennsylvania. Pennsylvania went sort of full guns into it. What was your experience?

Mr. LAVALLE. Really what happened to us is we followed the EPA directives, complied with everything they said we had to comply with. And then come to find out that they were willing to negotiate with other States and we were kind of locked into a program with a company called Envirotest, who did an awful lot of lobbying in Pennsylvania and convinced a lot of people that maybe we ought not to change direction.

But had EPA taken a position we're going to drop this idea of sanctions, we might have had a little more flexibility in dealing with Envirotest and dealing with the program in Pennsylvania. So we're kind of in a bind right now because of EPA refusing to listen to reason.

And I don't care what they said here today. I've heard a whole lot of conversation from those officials from EPA this morning that just doesn't lend itself to what really was happening in Pennsylvania anyway.

Mr. BURR. Well, there were quite a few——

Mr. LAVALLE. I guess that's a kind way to say it.

Mr. BURR. And I thank you. The gentleman from Pennsylvania.

Mr. KLINK. I thank the chairman for yielding to me. Senator LaValle, let's just pick up where you were, because I find myself really sharing some of the same feelings. It seemed evident, as I listened and I was pretty far down the line today and I got to listen to Ms. Nichols give her testimony, and my colleague, Ms. Eshoo from California, stood up after she was finished, she said "Well, what's the problem here." There's no problem, because they're flexible.

So why in the world do we need—but we know better and I think later on—and I wish—and I think Mr. Barton mentioned toward the end of the hearing he wanted to get in a little bit more under this 50 percent rule. When the deck is stacked against you, when you, in fact, get half credit for one step, you get full credit for another step, they're pushing you into a corner.

That's why I will tell you I got disgusted with the testimony and I went and conducted some other business, because I heard all I needed to hear. The description early on today during Ms. Nichols' testimony and her initial answers to questioning was all about the flexibility and the niceness and, boy, we're going to go along with everybody.

But, in fact, Senator, and I know you were here, and I've known you for many years and respect you and I know that I would never put words in your mouth, but I just am very anxious to hear your reaction to what you heard from Mary Nichols this morning.

Mr. LAVALLE. I think you were pretty much on target in your comments to Ms. Nichols, because, very clearly, in Pennsylvania, it appeared to us for a period of time—and I hate to say it this way, but maybe it's the only way I can say it—that EPA seemed to be lobbying for a centralized emissions test program that in Pennsylvania equates to an I/M240.

If they're claiming now that there was flexibility in what kind of program we could have developed in Pennsylvania, that's certainly not the message they were sending out last spring. As you know, we came here to visit with you last spring and discussed this whole issue then. The fact is that had EPA, as I said before, dropped the threat of sanctions, we would have had a lot more opportunity in Pennsylvania to deal with this issue.

And as you pointed out to the young lady today, to the tune of maybe $16 million as a cost as opposed to what they might claim they have coming today.

Mr. KLINK. If the Senator would yield one second. When you came down with Representative Alan Kukavitch to try to work through this, you brought with you the then Secretary of Transportation, Howard Jerusalem. My recollection of that meeting was that there was no flexibility, that they were locked in and they felt there was not an ounce of flexibility.

Am I wrong with my perception?

Mr. LAVALLE. We were led to believe that we were locked into that program. The only thing that changed over a short period of time was maybe the terminology. I think we were led to believe that it was the only program that EPA would accept. I think later in the spring, they may have changed that to a preferred program. But, again, I need to make it very clear there was no flexibility be-

cause had there been, we would not have the problem we have today in Pennsylvania.

Mr. KLINK. Representative Horn, I was interested in your testimony. What was your reaction? I think you mentioned during your testimony that you've been here for these hearings. What is your reaction, from a Texas perspective, to what you heard from Assistant Director Nichols today?

Mr. HORN. When I came in the door and saw who was speaking, I thought it was my kindly grandmother. Then when I heard who it was, I couldn't believe what they were saying because there was absolutely no flexibility in Texas. We were absolutely driven to the point we had to do what we did, which has turned out to be a total disaster, which I don't know how we'll ever pay our way out of it.

But there was no flexibility. As recently as 2 weeks ago, under oath, in some of our committee hearings, the EPA people in our area showed no flexibility whatsoever. When we explained different things we were looking at and what we could get approved, they gave us no inclination whatsoever that they would accept any type of new plan. So we're probably just going to pass our own plan and send in the tanks and troops, if they want to, because we haven't seen the flexibility yet.

Mr. KLINK. Senator, what would be your reaction, after the testimony that you heard today, Senator LaValle, after the testimony that you've heard today, to your colleagues back in Harrisburg? What would you suggest that we in Pennsylvania do? We've been told now the Pittsburgh area is back in attainment. It looks like our air is clean. Of course, we all knew that. Our air is clean and so are our wallets cleaned out because it's cost us everything we've got.

But what would be your recommendation to your colleagues back in Harrisburg as to what action you would recommend?

Mr. LAVALLE. Let me make it clear. You certainly understand the people in southwestern Pennsylvania. Our air in southwestern Pennsylvania probably is cleaner today than it's ever been. It continues to get cleaner, and, albeit, that's not the way we wanted to get the air clean, simply because of the demise of the steel industry, as you pointed out this morning.

I think my advice to—two things—to my colleagues in Harrisburg. One is to support some legislation that would stop this program for a period of time, to take a look at all the different kinds of research that we seem to have conflict over here today, and, at the same time, aggressively develop a program that we could present to the EPA as opposed to EPA telling us what's best for Pennsylvania. That's the direction I would like to go.

I would even take that a step further perhaps so that we make sure that we, as legislators, have a play in this whole thing, that perhaps the legislature ought to be more involved in approving a program as opposed to letting some of the bureaucrats do that for us.

We are the ones that answer to the public, not them.

Mr. KLINK. Senator, thank you.

Mr. LAVALLE. Also, I need to point this out, too. It's not just a political issue here. If people are going to be forced to take the time and the effort and pay money to put a program in place or to have

their automobiles inspected, then we ought to at least expect that EPA can show, without a doubt or beyond any reasonable doubt, that this program is going to do what they say it can do. They haven't done that yet.

Mr. KLINK. Senator, I thank you for being here, and to the rest of the witnesses, I thank you, also. I'd yield back.

Mr. BURR. Thank you, sir. At this time, I'd like to recognize Mr. Bilbray from California, a member of the full committee.

Mr. BILBRAY. Thank you, Mr. Chairman. I'd like the panel to sort of help me address this issue from a national point of view. I have experience in California. As you heard, even the EPA says that we probably have more than 20 percent of the people on the streets of California that aren't having their cars inspected at all right now.

The problem here is that when they start running down credit numbers for different types of programs, they're not figuring in the 20 percent plus is not even on the street, let alone if you go with an enhanced system, you may drive more people into that division. And when you think 20 percent and the numbers of emissions are between 2 and 17 times, you see what the percentage of emissions start looking like. So it messes with all the modeling that we do.

I'd like to just ask the representatives from the Environmental Protection Agencies. Do you guys have any numbers of rejections, of how many or what percentage out there is not registered or not being inspected at this time in your States?

Mr. SCHMIDT. Congressman, I do not have that. I will certainly provide it for the record.

Mr. BELANGER. I don't have that exact number, but I do recall reading a number in a report that was prepared recently indicating that I believe it was 87 percent of the vehicles that were expected to be coming through our centralized program were, in fact, coming through that program. That would not necessarily relate to unregistered vehicles.

There are some problems that we still have to straighten out in terms of how light duty vehicles, light duty trucks particularly are registered and whether they are registered as a commercial vehicle and whether they should show up. We don't have the sizes figured out yet. Our new data system, I think, is going to be gathering that. But if I can find some additional information, I'll be happy to forward it to you.

Mr. BILBRAY. I just want to say to the State legislators, as someone who has tried to work hard and long at finding the right answer that solves the environmental problem, we need to develop the strategies of a practical application, not just be opposed to the absurd Federal mandates.

And a good example that maybe we want to talk to ourselves and among ourselves about is some kind of coordinated effort to stop this game of people registering in one State and then living in another and driving in the other. And they really don't show up. It's sort of out of sight and out of mind, and we ignore it. But when those people are getting a free ride and everybody else is going to have to get hit again, I think it's time that those of us at the State level start talking about, yeah, I really am my brother's keeper, I need to work with other States.

And I know how tough it is in California. I can imagine when you get over here on the east coast. In all fairness, some of the States are smaller than our counties. The potential—and I guess that's going to be an insult. I'm just saying it's a different world. The potential for people to work the loopholes is so great and the only way to be able to fill up the loopholes, Mr. Chairman, is for the States to lead the charge; that we have some kind of national approach to make sure that when somebody registers in one State, that they live in that State.

But right now what it is, guys, and I'll say this to the legislators, we get the money, we don't get any of the problem, so why not let them register and be in Connecticut or California. We get the money off of it. The trouble is there's somebody registered in California who is not getting their car smogged because they're saying I'm registered in California, but I'm living in Pennsylvania. So they're exempt from getting their car smogged and they're polluting Pennsylvania.

So I say this—it's a good thing it's a group of allies here. We need to work together to fill this gap so we can then take that to the EPA and say, look, here, we have a better alternative and it means improving the existing system rather than trying to scrap it and replace it with a whole new system.

Sorry I'm speaking at you. I'm just trying to speak with you. Thank you, Mr. Chairman.

Mr. BURR. Thank you, Mr. Bilbray. I know that members are dwindling off as flights come up. We have a standing rule that at 3 o'clock, we can fly out of here, and we have lived up to that.

But, first, let me thank all five of you for your time today. Again, I apologize for the sporadic in and out of some of our members. I can assure you this is not the last time that this topic will be discussed in Washington. I am hopeful that through some of the information that you and the other witnesses have shared with us today that we will be able to make some intelligent choices as it relates to this issue for the future of this whole country.

Again, I thank you for your participation. This hearing is adjourned.

[Whereupon, at 2:58 p.m., the subcommittee was adjourned.]

[The following material was received for the record:]

RESPONSES TO SUBCOMMITTEE QUESTIONS BY EPA

Question 1: In testimony before this Subcommittee on March 24, 1995, EPA stated that the decision to discount test-and-repair programs by 50 percent was based primarily on emission data. Since the 1992 enhanced I&M rule was issued, please identify any new information (audits, studies, etc.) impacting (1) the 50 percent discount, (2) the relative weight given to covert audits, overt audits, tampering studies, tailpipe studies, ambient studies, and special studies, and (3) the formula for translating data into numerical credits and discounts.

- Also, for each project or study cited, please state whether the results were peer reviewed or independently assessed for accuracy, completeness, and methodological soundness, and if so by whom and when?
- What are EPA's plans for future I&M audits? How are current uncertainties and instability about state I&M plans affecting EPA's audit plans?

Response: In establishing credits for I/M programs, EPA considered a substantial body of data generated by both EPA and the states proving the existence of improper testing. In order to estimate the quantitative effect of improper testing on program emission reductions in test-and-repair programs, EPA relied primarily on draft and final documents from the two in-depth studies performed by the California

I/M Review Committee. There is no formula that is derived directly from overt or covert audit data. The Review Committee studies were the most comprehensive available on the effectiveness of test-and-repair I/M programs. In essence, these studies showed that the California test-and-repair program was getting less than 50% of the expected reductions, despite the fact that the California program was aggressively enforced and used BAR84 and later BAR90 technology. Because other states' and EPA's covert audit data, tampering survey data, and other information indicated that other areas with test-and-repair programs were experiencing problems similar to those in California, EPA applied the 50% discount to all test-and-repair programs.

EPA conducted extensive testing on 1981 and newer vehicles in the test-only programs in Arizona and Indiana and used them as the basis for credits for test-only programs. Credits for older vehicles remained the same as in the previous EPA guidance.

Under the 1992 I/M rule, enhanced I/M programs are required to perform ongoing self-evaluations of program effectiveness, including independent mass emissions testing of a representative sample of vehicles. Evaluation results must be submitted to EPA biennially, with the first report due after the first two years of testing have been completed. Once EPA begins receiving these reports, we will conduct on-site audits. So far, EPA has audited one enhanced I/M program - Maine. A copy of the audit report is enclosed (see Enclosure A). EPA also conducted informal site visits to Maryland, Texas, Arizona, and Colorado, to provide feedback prior to the start up of official testing in those enhanced I/M areas.

Recently, in response to a challenge of the test-and-repair discount by the California I/M Review Committee, EPA compared data it collected from the test-only I/M program in Mesa, Arizona with data from the test-and-repair Smog Check program gathered by the California Air Resources Board (CARB) in El Monte, California. The California sample included mass emissions data from 326 vehicles, while the Arizona sample included mass emission scores from 1,143 vehicles; vehicles were randomly selected in both cases, just prior to receiving their next scheduled I/M test. California is generally recognized as the best test-and-repair program in the country, while Arizona represents the best test-only program. Other than the difference in network types, the two programs are highly similar, although California's testing regimen is a bit stricter, and California cars are certified to stricter new car standards. Given these last two facts, one might expect superior emission reductions from the California program. In fact, EPA found that hydrocarbon (HC) and carbon monoxide (CO) emissions were substantially lower for the Arizona vehicles, reconfirming that test-only networks are superior to the test-and-repair variety. EPA has received some comments on this analysis and the discount in general, but we have not conducted a formal, peer review process. Most recently, EPA has begun discussions and data sharing with Virginia and Utah officials, who have requested that EPA consider their evidence on their programs' current effectiveness. We will keep you informed of developments in these cases.

Question 2: Please identify by name, date, and amount of EPA funds expended, any studies or evaluations EPA has conducted or sponsored since November 1992 to re-evaluate the effectiveness of test-only, hybrid, and test-and-repair programs.

Response: Since November 1992, EPA has received two studies of I/M program effectiveness prepared under a work assignment with Sierra Research of Sacramento, California. These are: "An Analysis of Evidence Relating to the Effectiveness of Inspection and Maintenance Programs" (September 7, 1994) which examines the conclusions and methodology of reports by the Desert Research Institute indicating that the current California Smog Check program is achieving no emission reduction benefits; and, "Analysis of Invalid Emission Testing in the California Smog Check Program" (April 27, 1994), which assessed the degree to which vehicles were improperly passed by test-and-repair stations in the California Smog Check program after repairs. The cost of the work assignment was about $56,000. In November 1993, EPA released a report entitled "Quantitative Assessments of Test-only and Test-and-Repair I/M Programs" (EPA-AA-EPSD-I/M-93-1), which updated earlier analyses to incorporate more recent data, fuller samples, etc. The report was prepared by EPA's staff in the Office of Mobile Sources; EPA did not track the resources used.

Question 3: Please provide for the record the amount of money EPA has spent since 1990 on developing a NO_x channel for remote sensing. Besides possible funding, has EPA taken any other actions to advance the reliability of remote sensing devices? How does this compare to the amount of money EPA has spent on IM240 research, development and demonstration projects since 1990?

Response: Since. 1990, EPA has spent $185,000 to help develop remote sensing measurement capability for nitrogen oxides. Most of this funding supported Dr. Stedman's remote sensing research. EPA has also spent over $1 million to purchase remote sensing equipment and conduct field studies. The field studies address the practical aspects of obtaining valid data from in-use motor vehicles, siting and using remote sensing equipment, and some work correlating roadside measurements with other measures of emissions from highway vehicles. All of this work contributes to the advancement of the reliability of remote sensing devices. During the same time period, EPA has conducted many, IM240 tests for a number of purposes, including emission inventory development work. The amount spent to develop the IM240 test for in-use inspection programs is approximately $1 - $1.5 million.

Question 4: At the Subcommittee hearing on March 24, 1995, Dr. Doug Lawson testified that EPA's own tampering data, when adjucted for vehicle age and mileage, indicates that there is no statistically significant difference between in-use vehicle fleets in centralized, decentralized and non-I/M areas. Please respond to these findings. Specifically, do you believe this study is flawed, and if so how?

Response: EPA analyzed the same tampering data as Dr. Lawson and came to quite different conclusions. In comparing roadside tampering data from the full range of vehicles in test-and-repair program areas, EPA focused on the degree to which tampering already present on vehicles at the time the I/M program started was found and fixed by the I/M program. What EPA found was that in test-only programs without tampering inspections (only 2 test-only programs at the time of the analysis performed tampering inspections), the test-only programs caused pre-existing tampering to decline. By contrast, test-and-repair programs with extensive tampering inspections showed tampering rates significantly higher than those found in the test-only programs to which they were compared.

Question 5: During the March 24th hearing, this Subcommittee heard evidence about an ambient air study conducted by Dr. David Kittelson and Mr. Scherrer from the University of Minnesota. That study concluded that the centralized I&M program in the Minneapolis/St. Paul area is producing no verifiable reductions in CO, contrary to EPA predictions derived from models that initially predicted reductions of 30 percent. When pressed to provide "real world" evidence that I&M is effective, EPA referred to an ambient air study by Tiao. However, the Tiao study makes clear that its conclusions are based on the accuracy of the model. It states in part "[p]rovided that the emissions factors are accurate, there is then some evidence from the observed ambient CO concentration levels to support the hypothesis that the I/M program has reduced ambient CO levels" (Environmental Science and Technology, 1989, Vol. 7, p. 806). Does 13-PA have any ambient data that does not rely on the model demonstrating the effectiveness of I&M? Please provide any ambient air data EPA has indicating that air quality is better in areas with centralized testing as opposed to decentralized testing.

Response: EPA has not analyzed ambient air quality data for this purpose. EPA's primary criticisms of the University of Minnesota CO study are that the authors appear to have omitted many important variables, subjected the data to unjustified simplifying assumptions, and failed to document all the steps they took in performing their analysis. The statement that EPA projected a 30% reduction in ambient CO from the Minnesota I/M program is a misunderstanding. The Minnesota program is a basic I/M program and is projected to achieve a 9% reduction in CO emissions from motor vehicles. An enhanced I/M program is expected to achieve emission reductions in the 30% range, but Minnesota has not implemented such a program. Finally, a recent study by Sherman Engineering of the actual emission test results reports that Minnesota is achieving or exceeding its design objective. An overview of that study is enclosed (see Enclosure B).

Question 6: What would be the credit levels for a program run with exactly the same parameters except that emission tests are conducted annually, biennially, every three years, every five years. The program should be an IM240 test program with no remote sensing. It is irrelevant what the other variables are, as long as they are identical throughout each of the Model runs. Repeat the above with a decentralized BAR 90 test program.

Response: The following table shows the reduction (from a base case which assumes no inspections) in the highway mobile source fleet predicted by the MOBILE5a model as a percent.

Program	HC* Benefit percent	CO Benefit percent	NO_x Benefit percent
Annual IM240	23.1	40.4	15.7
Biennial IM240	20.8	36.4	14.5
Annual BAR90	6.5	12.6	1.5
Biennial BAR90	5.8	11.3	1.5

*Note that the IM240 scenarios do not include purge and pressure test benefits which would increase the reductions to over 32%.

The IM240 program is modeled as a test-only (centralized) program and the BAR90 program is modeled as a test-and-repair (decentralized) program. The BAR90 program uses the 2500/Idle test procedure. All other parameters are identical. The MOBILE5a model was not designed to model programs with inspection frequencies less than biennial. We have not, therefore, modeled cases with inspections every three years and every five years.

Question 7: Assume for the sake of argument that a significant number (say 30 percent) of vehicles are clean for the test but dirty the rest of the year. How would this affect the accuracy of emissions tests, such as those conducted in El Monte, in predicting the emissions reduction from an IM240 test program.

Response: EPA recognizes that anecdotal reports exist from test-only I/M programs—where fraudulent testing is extremely difficult to accomplish given reasonable oversight controls—that cars are sometimes set to pass the steady-state test and then readjusted afterwards. EPA agrees that steady-state tests, even loaded steady-state tests, are easy to fool by simply leaning out the engine just prior to the test, retarding the timing, or removing a vacuum hose, to mention a few examples of test-defeating strategies. Such vehicle modifications, of course, were not part of the El Monte study design. EPA cannot comment on the probability that they occurred before vehicles arrived at the El Monte lab.

Question 8: The National Research Council in "Rethinking the Ozone Problem in Urban and Regional Air Pollution" (1991) stated the following in its executive summary: "It is likely that the fleets used in dynamometer testing to determine emission factors are not representative of on-road vehicles, that speed correlation factors and estimates of evaporatives are inaccurate and that the federal test procedure does not adequately simulate actual driving behavior . . . The current design depends too much on the assumption that the emissions inventories are accurate, and not enough adequate checks and tests of these inventories. Independent tests of the inventories and alternative approaches such as tunnel studies and remote sensing need to be added to the design so that errors in the inventories can be uncovered and corrections made. In addition, air quality models that use ambient data instead of emissions inventories to identify important precursors sources, to verify emissions algorithms, and to determine ozone precursor relationships could serve as useful checks of models that require the entry of accurate data from emissions inventories." (Page 7,8)

- Does EPA agree that dynamometer tests are not representative of on-road vehicles?
- Does EPA agree that FTP does not simulate actual driving behavior?
- Does EPA agree that independent tests such as remote sensing and tunnel studies need to be used to point out flaws in the model?
- Does EPA agree that air quality models that use ambient data instead of emission inventories should be used?

Response: EPA is aware of the National Academy of Sciences' (NAS) report quoted in your letter, and has a number of activities under way to address concerns that have been raised about the accuracy of highway vehicle emission factors and emission inventories. Enclosed with this response please find copies of two papers that have been developed by EPA's Office of Mobile Sources (OMS) to address known and suspected shortcomings in the estimation of in-use emission levels from highway vehicles. The first, "Highway Vehicle Emission Estimates" (June, 1992), was prepared in part to respond to the widespread perception that the Van Nuys (CA) tunnel study of 1987 indicated that emissions from highway vehicles were being underestimated by the then-current emission factor models (EPA's MOBILE3 and California's EMFAC7C) (see Enclosure C). The second paper, "Highway Vehicle Emission Esti-

mates - 11" (May 1995), provides an update to the first paper in the form of summaries of recent actions, research studies, and other efforts that have been undertaken to address the shortcomings in emission factor estimates and inventory development methodologies identified and discussed in the first paper. This second paper (see Enclosure D) is a late stage draft; OMS expects to finalize it for distribution after incorporating comments received from reviewers that were provided advance copies of the paper at the April 21 meeting of SAEWG (Standing Air Emissions Work Group).

Each of the subquestions listed in item 8 of your letter is discussed in these two papers. A summary answer is provided here for each question, along with reference to the applicable sections of the July 1992 and May 1995 discussion papers.

- "Does EPA agree that dynamometer tests are not representative of on-road vehicles?"

With the exception of the effects of roadway grade, which is also discussed in the question about the FTP, most driving behaviors can in fact be simulated to a high degree of accuracy with today's electrically controlled dynamometers and computer controls. Testing of vehicles over driving cycles having peak speeds as high as 75 mph have been conducted over the last few years, and some data on emission levels under such high-speed conditions is reflected in the MOBILE5a emission factor model. Testing of vehicles over cycles having higher rates of acceleration and deceleration is increasing as EPA converts its laboratory to electric dynamometers. EPA plans to include a means of accounting for these driving behaviors and the emissions impacts associated with them in the next major update to the model. The effects of grade are more difficult to quantify and to simulate in dynamometer testing, but work in these areas by EPA, CARB, the auto and oil companies, and other researchers is continuing. EPA is working with these parties to better refine dynamometer testing procedures to make them more representative of actual in-use vehicle operation.

This question, and the following question concerning the FTP, overlap many of the same issues. For additional discussion of the representativeness of dynamometer vehicle testing and of the FTP, please refer to pages 9-15 of the June 1992 paper and pages 21-33 of the May 1995 paper.

- "Does EPA agree that FTP does not simulate actual driving behavior?"

EPA agrees that the test procedures and driving cycles that have been used in dynamometer testing over most of the last 20 years are not representative of all in-use driving behaviors. The driving cycle and test procedure used in the certification of new vehicles, known as the Federal Test Procedure (FTP), was developed in the early 1970's to represent typical urban-area commuter driving. As such, the FTP did not contain any driving at very high speeds (over about 60 mph). In addition, due to equipment limitations and safety concerns, the maximum rates of acceleration and deceleration in the FTP are limited to ± 3.4 mph/second; there is evidence that these acceleration and deceleration rates are exceeded in real-world vehicle operation. There is also no good means of simulating the effects of roadway grade on emissions during dynamometer testing; in effect, dynamometer testing to date has inherently included the assumption of level roadways.

The 1990 Clean Air Act Amendments (CAAA) recognized these limitations of dynamometer tests (particularly the FTP) at simulating the range of conditions that affect emission levels and occur in real-world conditions. For this reason, the 1990 CAAA directed EPA to conduct a study of the extent to which dynamometer testing fails to capture driving behaviors that are known to occur and to affect in-use emission levels, and to develop a rulemaking to revise the FTP to account for these behaviors to the extent practicable. This study was released last year, and the formal rulemaking process is well under way. EPA has performed studies using instrumented vehicles and "chase cars" in order to quantify the types and frequencies of driving behaviors not accounted for accurately by the current FTP. A final rulemaking is expected within the next year.

As noted above, EPA is aware that the current FTP, which has been in use since the mid-1970s, does not capture all driving behaviors that are important in terms of real-world vehicle operation. However, we would stress the importance of recognizing that the emission factors calculated by the MOBILE model are not based only on FTP emission test results; vehicles have been and continue to be tested over a number of different driving cycles spanning a range of speeds and driving patterns, at different temperatures, and using different fuels, and the results of such testing are incorporated into the MOBILE model. The model provides considerable flexibility to the user to specify the conditions for which in-use emission factors are to be estimated.

The "Non-FTP Study" mentioned above has greatly increased EPA's understanding of the types of driving behaviors not reflected in the current FTP, their frequency of occurrence, and the emissions impacts associated with such driving. EPA has begun to work on revising the MOBILE model to account for some of these conditions, while additional data collection and analysis will be required in order to address others. The effect of roadway grade in particular is an issue that will be difficult to address, and likely will not be sufficiently understood to include in the next update to the MOBILE model. Most of the other aspects of driving behaviors that are not captured by the current FTP will be addressed in the revised FTP rulemaking, and provisions for modeling the emission impacts of such behaviors are being developed for inclusion in the next version of MOBILE.

The May 1995 paper, pages 25-28, summarizes the major areas in which the current FTP as been found to be insufficient for characterizing actual driving behaviors. EPA has also released a technical report, "Federal Test Procedure Review Project: Preliminary Technical Report," (EPA 420-R-93-007, May 1993), which describes the study of the representativeness of the current FTP and the findings of that study in much more detail.

• "Does EPA agree that independent tests such as remote sensing and tunnel studies need to be used to point out flaws in the model?"

EPA welcomes data that can be used to verify the accuracy of the model and its assumptions. The tunnel studies that have been performed in the last 8 years, particularly the Van Nuys CA study (1987) and the Fort McHenry and Tuscarora Mountain studies (1992), have in fact been used to examine the ability of the model to estimate emissions in the relatively limited situations to which such studies are applicable. (One limitation of using tunnel studies as a check on the accuracy of the model is that such studies only examine emissions under a very specific set of conditions in terms of roadway type, traffic speed, and other variables.) The 1987 Van Nuys study provided evidence that the model in use at that time (MOBILE3) was underestimating in-use emission levels. This study and the inferences drawn from its results were a factor in EPA's decision to develop and release the enclosed July 1992 paper. (See pages 7-9 of that paper for specific discussion of the 1987 study and its implications for the MOBILE model.)

The 1992 tunnel studies at Fort McHenry and Tuscarora Mountain provided evidence that the discrepancies between measured emission factors (those derived from the tunnel study data) and modeled emission factors (as are calculated by the MOBILE model) has been substantially reduced. In fact, the researchers that conducted the 1992 studies state in their report that "the models indeed can predict fairly well in situations which are reasonably well characterizable and in which most of the model assumptions are reasonably well met." These tunnel studies, and comparisons of the emission levels measured by the studies to those predicted by the MOBILE model for those situations, are discussed in some detail in the June 1992 paper (pages 7-9) and the May 1995 paper (pages 15-18).

Remote sensing devices (RSD) as a tool for verification of the emission factor models share the same basic limitation as do tunnel studies: The data obtained from RSD provide only an instantaneous "snapshot" of vehicle emissions under one specific set of driving conditions. Depending on where the RSD is located, these conditions may vary widely. For example, on a suburban sidestreet in early morning, most or all vehicles are in cold-start mode and traveling at low speeds; on a section of limited access highway in a rural area, most or all vehicles are fully warmed up and are traveling at relatively high speeds; and on an entrance ramp to a limited access highway, most or all vehicles would be operating under heavy acceleration rates. In any case, the data obtained only describe what is occurring at that moment under those specific conditions. In order to develop an emission inventory for highway vehicles, information on emissions over an entire range of operating modes, speeds, and other variables are necessary, as well as estimates of the fraction of total vehicle miles traveled (VMT) represented by each specific set of conditions. This limitation severely compromises the ability of RSD data to serve as a means of verifying the estimates produced by the models. However, EPA continues to monitor the further development and application of RSD, and envisions such devices playing a meaningful role supplementing other components of an inspection and maintenance (I/M) program and helping to focus attention on the worst-emitting vehicles. See page 25 of the May 1995 paper for discussion of this topic.

• "Does EPA agree that air quality models that use ambient data instead of emission inventories should be used?"

Ambient data is of course the best means of assessing ambient air quality. However, ambient monitoring data is not sufficient to determine with confidence what sources of emissions are contributing to the observed pollutant concentrations. Rath-

er than saying that models using ambient data should be used instead of those using emission inventories, EPA would take the position that both types of models are useful, and that each can serve as a partial means of verifying results produced by the other. The quoted section of the executive summary of the NAS report takes essentially the same stance: "In addition, air quality models that use ambient data instead of emission inventories to identify important precursor sources, to verify emission algorithms, and to determine ozone precursor relationships could serve as useful checks of models that require the entry of accurate data from emissions inventories." [Emphasis added.]

In response to the need to examine ambient emissions studies and what they are telling us, EPA had a contractor prepare a critical review of the various ambient emissions studies that have been conducted in recent years. This is discussed on pages 13-14 of the enclosed May 1995 paper. While the contractor concluded in their report that the evidence from such studies clearly indicates the need to improve emission inventory estimates for all sources (stationary area and point sources, as well as highway vehicles and non-road mobile sources), they also noted that the conclusions of specific studies are frequently in disagreement.

Thus, while EPA recognizes the importance of the role of such studies in providing more information on what is occurring in terms of pollutant emissions and air quality impacts, and will continue to monitor developments in these areas, we do not believe that air quality models using ambient data can replace those that are based on accurately developed emission inventories. Only through further refinements in the accuracy of emission inventories from all sources can the best and most cost-effective means of reducing emissions and improving ambient air quality be identified.

Question 9: Has EPA validated the MOBILE 5a model? If so, did the validation include peer review and if so, who were the peer reviewers and what were their comments? Please provide copies of all peer reviewers' comments. If Mobile 5a has not been validated and/or peer reviewed, what was the reason for not doing so? Your testimony indicates the MOBILE 5a or its successor might be peer reviewed in the near future. How do you anticipate choosing peer reviewers?

Response: In a literal sense, no, EPA has not validated the MOBILE model. If there were a truly independent and accurate means of quantifying in-use vehicle emission factors and activity levels (VMT), such validation would be straightforward; however, since all known approaches to estimating in-use emissions and VMT are subject to uncertainties, there is no "right answer" against which the model can be validated. Having said that, EPA takes the position that model validation is an ongoing, continuous process. We feel confident that with each new version of the model, revised to reflect results of the latest testing, data collection, and research, we have improved the accuracy of the model's estimates of in-use emission factors.

In terms of peer review and other means of seeking outside review and comment on our work in this area, there are a number of activities that have taken place throughout the history of the MOBILE model, and other newer initiatives that are planned for the immediate future. A discussion of these issues is provided on pages 35-39 of the May 1995 paper (see Enclosure D). A summary of past and planned means of seeking additional input from parties outside OMS is provided below:

In the development stages of each new version of the MOBILE model, OMS has always held public workshops at which preliminary analyses, statistical results, and proposed modeling algorithms are presented. These "development workshops" have been attended mostly by representatives of the auto companies in the past, with a greater presence of representatives from the oil companies in recent years as more attention has been focused on the effects of fuel properties on in-use emissions. Some representatives of the model "user community," such as state and local/regional air quality and transportation departments, have also attended these workshops, advance notices of which are published in the Federal Register. Attendees at these workshops have been invited to submit comments, reactions, additional test data, and other information that can be used in determining the best approaches for use in the model. EPA plans to continue conducting these "development workshops" as work on future revisions to the model proceeds.

While these "development workshops" have provided opportunities for representatives of the directly affected industries (i.e., auto and oil companies), relatively few representatives of the community of model users have attended them. (Major constituents of the model user community include state and local/regional governments' environmental/air quality, transportation, and planning departments.) In response to criticisms that EPA has historically failed to adequately consider input from parties outside the Agency, and has not taken adequate time to educate users of the

model about the needs and limitations applicable to revising the model, we have started to hold a second kind of workshop as part of the MOBILE model development process. The first of these "emissions modeling workshops" was held last June, and attended by more than 40 representatives of the user community described above. In this workshop, OMS took the role of audience, and attendees at the workshop made presentations on the problems they face in using MOBILE to meet requirements imposed on them by the Clean Air Act Amendments, the things that they felt required more attention and explanation on the part of EPA, and the issues that they believed required more of our attention and resources in planning new test programs to collect data and the development of model revisions.

This workshop is discussed on pages 36-37 of the enclosed May 1995 paper. EPA found the workshop to be very helpful in providing additional perspective on the needs of and problems faced by the user community, and intends to host similar workshops in the future. The next such workshop has not been scheduled, but current plans are to have it before the end of this year. We will be using the input obtained from these workshops to assist us in planning and prioritizing future test programs and requirements for revisions to the model.

With respect to the issue of "peer review" of the model, EPA acknowledges that the entire model has not been subjected to a complete peer review process. However, EPA obtains significant outside input during the model development process through workshops, as discussed above. In addition, particularly since the late 1980's process, many research initiatives have been planned and implemented by a range of interested parties (auto and oil companies, university researchers, and contractors and consultants to industry and to state and local/regional agencies) on issues relating to accurate estimation of in-use emissions from highway vehicles. EPA strives to keep abreast of developments in these areas, and the information and data provided by such research is considered, as it becomes available, for applicability to and use in the MOBILE model.

In response to your request that copies of comments received from peer reviewers be supplied, we are enclosing copies of all comments submitted after the most recent of the development workshops (see Enclosure E). While not requested by EPA, the American Petroleum Institute (API) in 1994 published a series of "investigative reports" on major components of the MOBILE model, which serve as a kind of peer review. These three reports ("Investigation of MOBILE 5a Emission Factors: Assessment of Exhaust and Non-Exhaust Emission Factor Methodologies and Oxygenate Effects," "Investigation of MOBILE5a Emission Factors: Evaluation of I/M and LEV Program Benefits," and "Investigation of MOBILE5a Emission Factors: Evaluation of IM240-to-FTP Correlation and Base Emission Rate Equations," all June 1994) are available through the Publications Department of API. EPA has received copies of all three reports, and will be considering their contents carefully in developing the next revision to the model.

As to the peer review of MOBILE5a or its successor model, we are working to increase the participation of more parties in reviewing and analyzing proposed changes to the model and to seek such involvement at an earlier stage of the process. OMS is in the process of establishing a Technical Advisory Committee, to be composed of representatives of the affected industries, scientists and researchers from academia and private firms, and other government agencies. This Committee's duties will include, but will not be limited to, review of mobile source emissions data and models.

The number of participants involved in assessing the accuracy of the model and its underlying assumptions from varying perspectives is greater than ever in the past, and we continue to seek information and reaction from more and more varied sources. Some of the details as to how OMS intends to accomplish this are discussed in the May 1995 paper, pages 37-39.

Question 10: The Subcommittee heard testimony from several witnesses that about one-half of marginal emitters, when identified for repairs, upon retest are found to have higher emissions than if no repairs were attempted. Since one of the claims for IM240 equipment is greater accuracy in identifying emitters, does the EPA MOBILE model include a discount in emissions reduction effectiveness to reflect this phenomenon? If not, please explain why.

Response: EPA staff have not pursued these witnesses' statements enough to fully understand the data and analysis on which they are based. We suspect that an over generalization is being drawn from two sources without adequate consideration of the specifics of those data sets. First, in the I/M Review, Committee's study, some marginal emitters were sent for repair because they failed a visual check and after repair, returned with higher emissions. This provided no useful information with respect to marginally emitting cars that might fail a tailpipe inspection. Second, in

the El Monte study, some failed cars were marginal emitters for HC and got little or no HC benefit from repair, but the analysis does not consider whether these cars may have achieved CO or NO_x reductions.

The I/M240 is not intended to identify marginal emitters for repair because it is generally not cost effective to attempt repairing them given the existing level of skill in the repair industry. In fact, EPA's research shows that the IM240 fails fewer marginal emitters than steady-state tests. A frequent misunderstanding about I/M programs is that they are aimed at bringing all cars back to their original certification standards. This is not the case. The ideal I/M program will single out only those vehicles which are high (not marginal) emitters, and which are most likely to produce substantial, cost effective emission reductions as a result of repairs. For this reason, the cutpoints for the IM240 are set at 2–3 times the certification level, with phase-in cutpoints set even looser. The IM240 is more accurate in that it finds more of the high emitters without failing the marginal emitters. Finally, when a marginal emitter does experience an increase in emissions during a repair attempt, the increase is usually quite small in absolute terms.

Question 11: The Subcommittee heard testimony indicating a substantial number of motorists are either improperly registering their vehicles or are not registering them at all, with I&M avoidance running as much as 20 percent in California and 13 percent in Connecticut. Please explain how these are accounted for in EPA's MOBILE 5a model.

- Specifically, since remote sensing would presumably locate these vehicles, what credit does the model provide for an aggressive remote sensing program?
- Also, to what extent can an aggressive remote sensing program require repairs earlier and more frequently than an annual or biennial I&M program?

Response: Only 2% of the vehicles in California are in long-term noncompliance with the registration requirement, while roughly 8.5% have been found to be late in registering by a month or two. Surveys of other states show similar outcomes. The "up to 20%" figure cited by EPA during the March 24th hearing is a typical noncompliance rate for a sticker-enforced program. Connecticut's program is sticker-enforced. The Clean Air Act Amendments of 1990 require registration denial-based I/M enforcement. EPA's rules require that states assess the compliance impact of all varieties of fraud on the emission reduction potential of the program, and that such be reflected in the program's MOBILE5a modeling assumptions. This includes registration fraud in programs enforced through registration denial. In addition, the I/M rules require states to undertake a variety of strategies to minimize such fraud in the future (a copy of the relevant section is enclosed) (see Enclosure F).

While, EPA believes that remote sensing devices (RSD) can contribute to the emission reductions otherwise achieved by a periodic I/M program, we have only recently received the results of the RSD pilot study conducted in Sacramento and have not yet assessed the appropriate credits. It would not be safe to assume that RSD will catch vehicles missed by periodic I/M due to enforcement problems. As shown in Sacramento, comprehensive fleet coverage through RSD is a lot more difficult than assumed. Despite the State's best efforts, the Sacramento pilot study successfully captured less than half the target fleet.

Nevertheless, RSD could be used to identify some registration-related problems. For example, RSD could be used to identify vehicles with both expired plates and potentially high emissions, allowing the state to prioritize its registration enforcement efforts to focus on those vehicles which will also yield emission reductions. Furthermore, RSD's video capabilities could be used to identify out-of-area and out-of-state plates. The state could potentially follow-up on out-of-area plates. The nature of such follow-up could include checking other sources of information on the primary residence of the owners of those cars, or contacting the owners directly to ask questions. One alternative is to have police present at remote sensing locations to pull over such cars or at least those that show high emission levels. Extensive use of staffed RSD sites and police, however, would likely be prohibitively expensive.

Question 12: In February 1995 EPA publication (EPA AA-EPSD-IM-94-1226; page 20), EPA states that "test-and-repair is not effective at reducing vehicle emissions." This statement appears to be based in part on the emissions rates from an El Monte, CA. study as compared to a Phoenix, AZ. study. During the hearing, testimony was presented that challenged the selection criteria and methodology in comparing cars in the two studies. How does EPA respond to the questions raised about selection biases and audit methodologies by the California I/M Review Committee, particularly the testimony of Mr. Joel Schwartz.

- Specifically, when Mr. Schwartz compares Phoenix vehicles to those from the Sacramento study he reaches quite a different conclusion. That comparison indicates

vehicles from Sacramento and Phoenix have about the same CO emissions, with Arizona vehicles having lower HC emissions, and California vehicles having lower NO_x emissions. Please perform your own analysis between the Sacramento study vehicles and the Phoenix vehicles. What is the result? If different than the study conducted by Mr. Schwartz, please explain why?

Response: Dr. Schwartz maintains that EPA's comparison of IM240 data from the test-only I/M program in Mesa, Arizona and the test-and-repair program in El Monte, California is biased against California. In Arizona, vehicles were randomly selected for IM240 testing at the time they showed up for their regular I/M test. Dr. Schwartz claims that this biased the sample toward being unusually clean because "in Arizona's program, a significant number of motorists prepare to make their cars lower emitting for their emission test without altering their cars' emissions on the road." This claim seems to be based upon the so-called "clean for a day" theory, though no data is supplied to substantiate the claim. In California, on the other hand, motorists were mailed notices within a few months of their regularly scheduled I/M test soliciting participation in the IM240 sample. Dr. Schwartz maintains that this sample would be biased toward dirty cars, because participants were offered free repairs. The extent to which any such incentives exist regarding owner behavior prior to the test are essentially unanalyzable from any current data source.

Dr. Schwartz's comparison of the Sacramento sample to the Mesa sample is not a valid comparison. Unlike the studies done in Mesa and El Monte, the Sacramento sample established no strict criteria concerning when in the regular testing cycle vehicles were selected. In Mesa and El Monte, vehicles were tested just prior to their next scheduled test, and therefore were comparable. In the Sacramento sample, however, vehicles varied substantially in the amount of time that had passed since the last inspection, introducing an element of uncertainty that was not present in the Mesa and El Monte samples.

Finally, Dr. Schwartz's comparison of CO emissions is not correct. He subtracted the difference in CO standards for Federal- and California-certified vehicles. Although these standards are different on paper (with California CO standards being the looser of the two), the vehicles' actual CO emissions levels when new are very similar, since the Federal CO level is a natural result of the technology used to control HC and NO_x on both federal- and California-certified vehicles.

NOTE: Enclosures referred to are retained in the Commerce Committee's files.

SIERRA RESEARCH
May 23, 1995.

HON. JOE BARTON
Chairman, Subcommittee on Oversight and Investigations
U.S. House of Representatives
Room 2125 Rayburn House Office Building
Washington, DC

DEAR CONGRESSMAN BARTON: Set forth below, are the questions from your April 25 letter, followed by my responses to those questions.

Question 1: You state that you "independently checked" the quality of the Sacramento data. Does this mean the data was quality assured? What specifically did you do to quality check the data? Please explain step-by-step the process you made to check the quality of the Sacramento data.

Response: Our independent checking of the California I/M Pilot Project data was done for both the El Monte and Sacramento data. We have a series of data-checking routines that are routinely used during analysis of vehicle emissions test data. These routines involve testing for valid concentration ranges (e.g., a vehicle cannot emit 20% CO_2), reasonable carbon balance fuel economy (e.g., 5000 pound vehicles will not achieve 30 mpg over the Federal Test Procedure), and in the case of Federal Test Procedure (FTP) data, checking for the internal consistency between individual bag and composite test results.

For the El Monte data, considerable time was also spent in phone conversations with California Air Resources Board (CARB) staff to verify emissions results from apparent "outliers" and resolve problems associated with inconsistent test sequence codes (which was important from the perspective of calculating before- and after-repair effects). Sierra's identification of inconsistencies in the test sequence codes led to the release of a modified version of the database in the middle of February.

The Sacramento data consisted of two different databases: (1) IM240 and pressure and purge test data collected at contractor-run pilot lanes, and (2) remote sensing device (RSD) data collected at various locations within Sacramento. Sierra's review

of the IM240 database revealed that a number of identical test records were logged several times; those records were deleted prior to analysis. A number of IM240 scores in the Sacramento database were found to be negative, which can occur if a vehicle is emitting at low levels and the background concentration of that pollutant is relatively high. Those results were reset to zero before analysis. Our review of the database also revealed that the evaporative emissions control system (pressure and purge) data were not being logged in a consistent format by all contractors, making it impossible to adequately analyze the data. This problem was brought to the attention of Bureau of Automotive Repair (BAR) staff, who then contacted the contractors participating in the California I/M Pilot Project to resolve the problem.

The RSD database compiled in the Sacramento portion of the California I/M Pilot Project consisted of nearly 2 million records. Records without a valid license plate reading (which was used as the merge variable with the IM240 database) were deleted, as were RSD readings labeled in the database as faulty. Records with 0.0% CO_2 and less than 15% CO were deleted because of an inconsistent carbon balance. Hydrocarbon readings were also discarded if there was not also a valid CO reading because of concerns about the accuracy of the dilution calculation. Because our analysis was focused at analyzing the potential effectiveness of "real-world" RSD screening, we *did not* selectively delete certain sites and records as some analysts have. Since the sites were chosen by leading experts in the field, data collected should be representative of a well-run RSD program.

Question 2: EPA's I/M handbook [Section 4, p. 80] states that the top 10% of CO emitters produce 33 percent of HC, 52 percent of CO and 11 percent of NO_x. Do you agree with these figures? What percent of the excess reducible emissions are accounted for by the worst polluting 10 percent of the fleet?

Response: I have not computed what percent of the "excess reducible emissions" are caused by the worst polluting 10% of the fleet. Based on the tests of vehicles recruited during the Sacramento Pilot Project, the worst polluting 10% are responsible for about 30% of the total emissions. 50% of the total emissions are generated by 22% of the vehicles. (Both of these calculations are based on weighting HC, CO, and NO_2 emissions together after dividing CO by ten to account for its relatively smaller adverse impact per gram.)

As the above numbers indicate, the majority of the emissions are *not* caused by only 10% of the vehicles. More importantly, the worst polluting emissions can only be detected with an enhanced I/M test that includes an analysis of evaporative emissions. Remote sensing cannot find the worst polluting 10%.

Question 3: Evidence from the 1,100 Car study in California, the El Monte, CA study, as well as testimony from Dr. Lawson, suggest that marginal emitters are likely to have increased emissions after repair. Please comment. Do you agree or disagree? What percent of vehicles failing IM240 are marginal emitters? Please support your response with data and analysis.

Response: There is general agreement that "marginal emitters" are more likely to have increased emissions after repair; however, this is only true when the emission level of the vehicle is defined in terms of stop-and-go driving on the Federal Test Procedure. Dr. Lawson often refers to the lack of emission reduction benefits of attempting to repair marginal emitters as somehow rationalizing the fact that remote sensing cannot reliably separate defective vehicles from vehicles without defects. It is certainly *not* true that vehicles that pass a remote sensing test are likely to be marginal emitters. One of the most serious deficiencies of remote sensing is that it misses many high emission vehicles, especially those with evaporative system defects, high NO_x emissions, and high hydrocarbon emissions. The percent of vehicles failing IM240 that are marginal emitters depends on the cutpoints used. It is a simple matter to adjust IM240 cutpoints to eliminate marginal emitters.

Question 4: A September 1992 GAO report to the Oversight and Investigations Subcommittee stated that over 25 percent of the vehicles tested using the IM240 test procedure failed an initial emissions test but passed a second IM240 emissions test, though no repairs were made to the vehicles. This report was largely based on EPA data from Hammond, Indiana, in which 18 vehicles that initially failed an IM240 test, passed a second test, even though no repairs were made. The El Monte data set show that around 20 percent of the vehicles that failed a baseline dynamometer test passed a subsequent test when it was given to them at a different location and time. Yet you state in your testimony that IM240 variability is a relatively small problem. How do you reconcile your testimony with the above?

Response: I do not know what data were used by GAO, whether the sample was representative, or whether the vehicles were driven by skilled drivers. The El Monte

data set does *not* show a 20% pass rate during a second IM240 test; the second test used in the El Monte program was an RG240 test (using a "repair grade" dynamometer that does not simulate vehicle weight as accurately). The 20% pass rate for vehicles that failed IM240 may be an indication of problems with the RG240 test equipment. Our independent review of the data from Hammond, IN, indicates that approximately 20% of the vehicles that failed an IM240 at one location passed when they were taken to a separate location for a retest followed by repair. As in the case of the El Monte data, the testing was done at two different facilities. I do not know the extent to which the 20% variability is due to equipment differences. My own experience, which includes running replicate tests on many vehicles using dynamometers, indicates that less than 20% variation in repeated test results is easily achievable.

As I pointed out during my testimony, the variability associated with IM240 testing is primarily due to the skill level of the driver. Poorly trained drivers can introduce even greater variability than 20% even when there are no equipment differences. One way to eliminate this variability is to use a steady-state test procedure like the Acceleration Simulation Mode. This would substantially reduce the driver skill level required to obtain repeatable results.

Question 5: The 1989, 1990 and 1991 roadside survey data collected in California show no observable effect on emissions and tampering between I/M areas and non-I/M areas. How do you reconcile this with the previous I/M Review Committee's Fourth Report to the Legislature that the Smog Check program was achieving reductions of 19.6 percent for HC, 15.7 for CO and 6.7 for NO_x?

Response: Results showing no difference between I/M areas and non-I/M areas can result from differences in the demographics. Analyzed properly, the California roadside data show that the current I/M program is reducing tampering, in contrast to the claim frequently made by Dr. Lawson that tampering rates are not being affected by the California I/M program. The California Bureau of Automotive Repair calculated that the tampering rates for all pre-1980 models have been reduced from 48% in 1987 to 45% in 1989, 41% in 1991, and 38% in 1992, despite the increasing average age of the vehicles. If the Smog Check program were not having a significant effect, the tampering rate would be expected to increase as the vehicles age.

I have been unable to precisely duplicate year-to-year changes in tampering rates calculated from the same data set used by Dr. Lawson; however, I have been able to determine that he manipulates the data in a manner that leads to erroneous conclusions. The conclusions Lawson reaches from the roadside data are not supported by our analysis of data and, based on my discussions with Bureau of Automotive Repair staff, they don't agree with Lawson either.

Question 6: Dr. Lawson states that a substantial portion of vehicles are "clean for a day." This thesis was contained in the peer reviewed article "Passing the Test-Human Behavior and California's Smog Check Program." In testimony before this Subcommittee on March 24, you stated that your data indicated that this problem was probably less than 10 percent. Please provide the basis for your statement. Has the data you rely on been quality assured or the study peer reviewed?

Response: The "clean for a day" hypothesis can be rejected on two levels. First, at the conceptual level, it is difficult to understand why any significant fraction of the motoring public would go to the expense of repairing a defective vehicle so that it will pass an I/M test and then immediately incur additional expense to restore the vehicle to a defective condition. Second, the data collected during undercover car test programs makes it clear what is actually happening. Many emissions-related defects are either inadvertently missed or intentionally ignored during the inspection at private garages. In addition, tailpipe emissions test results are often falsified. The vehicles are not really "clean for a day," they are falsely passed. A peer-reviewed study my firm conducted in 1993 demonstrated that the undercover vehicles used to reach this conclusion were representative of the on-road fleet.

Question 7: Based on the El Monte study, your March 24 testimony before this Subcommittee predicts that a centralized IM240 would achieve over a 30 percent reduction in emissions. Assume that 50 percent of vehicles tested are clean for the test but dirty the rest of the year. What effect would this have on the predicted emissions reductions in the El Monte study?

Response: The assumption that "50 percent of vehicles tested are clean for the test but dirty the rest of the year" cannot be supported by any scientifically valid analysis. I do not feel it would be appropriate to make any estimates of I/M program effectiveness under such an unrealistic set of assumptions. There is absolutely no basis for assuming half of the entire fleet would actually be repaired for one day

and then immediately restored to a defective condition. In almost all cases, vehicles that are reported to be clean on the day of the test and then found to be dirty shortly thereafter were never properly tested in the first place. The undercover car data collected in California prove that to be the case.

Question 8: What did El Monte indicate as to the effectiveness of IM240 in relation to idle tests for CO and HC? Based on this, what would you expect pollution reductions to be if BAR90 was used instead of IM240 in the El Monte study?

Response: The El Monte data can be used to evaluate the effectiveness of alternative test procedures but it is important to recognize that the ability of any particular test to *initially* identify excessive emissions is only half of the story. The ultimate value of a test procedure depends on its ability to determine whether the vehicle has been effectively repaired. Under the El Monte portion of the pilot project, vehicles were repaired to pass either the ASM test or the IM240 test. No vehicles were repaired to pass the idle test. Because idle emissions are inordinately sensitive to idle speed and idle mixture adjustment, repairing a vehicle to pass an idle test usually results in a lesser reduction in emissions during stop-and-go driving than occurs during idle. Using data collected during the I/M evaluation program done in El Monte in 1992, we evaluated that effect by comparing the FTP emission reductions of vehicles repaired to pass an idle test to the FTP emission reductions of vehicles repaired to pass ASM or IM240 during the 1994 I/M Pilot Project. As shown in the following table, the loss in emission roductions associated with idle testing is 26% for HC, 42% for CO, and 96% for NO_x.

Fleet-Average Emission Reductions Achieved Through Identification and Repair of Defects in 1981 Model Vehicles

[In Percent]

Test Procedure	HC	CO	NO_x
Dyno (ASM)	38	43	23
Idle/2500	28	25	1
Change in Benefits With Idle/2500	−26	−42	−96

Question 9: Your testimony states that all of EPA's and the Air Resources Board's data show a poor correlation between remote sensing and IM240, and that you have never seen coefficients in the range of .5 to .8. However, all of the following studies indicate better correlations between IM240 and remote sensing than you indicated in your testimony. Have you seen the studies below, and if so, please indicate why they are not valid?

- A 1990 EPA study conducted by Glover and Clemons
- A 1992 study conducted by Bob Stephens of General Motors in 1992 in which IM240 was used to validate remote sensing readings
- A 1991 study by Desert Research Institute and a 1993 California Air Resources Board study
- In a 1994 study by Hughes, vehicles failing a remote sensor set at 4 percent CO and 1000 ppm HC were then tested with IM240. The false failure rate for one pass through a remote sensor was 6 percent for CO and 7 percent for HC.

Response: When I refer to the poor correlation between remote sensing results and average emissions in stop-and-go driving (as measured by either IM240 or the FTP), I am usually talking about a *real world* remote sensing test, not a special experiment under which technicians drive vehicles past remote sensors at steady speeds. The studies that generate high correlations between remote sensing test results and FTP or IM240 emissions involve idealized, totally unrepresentative situations.

In one portion of the 1990 EPA study, "real" on-road RSD measurements were compared to IM240. According to the study authors, ". . . the regression correlation coefficient is marginal in the case of CO and extremely poor in the case of HC." EPA reported r^2 values of 0.4–0.5 for CO and 0.001 for HC.

I'm not sure what you are referring to as the 1992 DRI and 1993 CARB study. A study CARB published in December of 1992 shows that reasonable correlation between RSD measurements and average emissions could only be achieved under highly artificial test conditions when fully warmed-up vehicles were driven past RSD's at a constant speed.

I haven't read the 1992 study by Stephens, but I have reviewed a 1994 study, of which he was a principle author. In the 1994 study, the r^2 for RSD vs. IM240 was

0.34 for CO and 0.39 for NO_x. To get above $R^2 = 0.5$, multiple RSD readings under different driving conditions had been averaged. The practicality of achieving multiple RSD readings, particularly on older cars, is questionable.

I have not reviewed the Hughes study.

Question 10: Was the El Monte pilot study set up to evaluate I/M network types (test-only, test-and-repair), or rather was the study meant to evaluate ASM vs. IM240?

Response: The El Monte pilot study was designed to compare ASM and IM240; however, the data collected during the pilot study can be used in conjunction with data collected during undercover vehicle testing at test-and-repair facilities to estimate how the emission reductions would have been affected by the same degree of fraud observed to occur at decentralized facilities. That is exactly what we did in calculating a 43% loss in HC benefits for decentralized testing.

From the nature of most of the questions you have asked, it is clear that you or your staff find Dr. Lawson's theories persuasive. In my view, Dr. Lawson is seriously misinformed about vehicle emissions characteristics in general and the ability to detect and cause the correction of emissions-related defects with alternative emissions testing concepts. Most acknowledged experts in the area of motor vehicle emissions control share my views and reject Lawson's. I hope you will ultimately do the same.

Sincerely,

THOMAS C. AUSTIN, *Senior Partner.*

RESPONSES TO SUBCOMMITTEE QUESTIONS BY DOUGLAS R. LAWSON, RESEARCH PROFESSOR, DESERT RESEARCH INSTITUTE

Question 1: Mr. Austin stated that vehicles which are "clean for a day" make up less than 10 percent of vehicles tested. You state that the problem is more severe. What is the basis for your statement? Is it based on peer-reviewed information?

Answer: The observation of "clean for a day" comes from our independent analysis of data collected during California's random roadside surveys, which shows that California's Smog Check program has not been effective in reducing emissions or tampering of vehicles' emission control systems. When we compare emissions of vehicles as recorded on their Smog Check inspection records with their emissions when stopped at random, we observe that vehicles' emissions are lowest on the day of the test, and that fleet emissions seem to be unaffected by the Smog Check test as administered in California. This phenomenon is shown in Figure 9 of my peer-reviewed paper titled "Passing the Test—Human Behavior and California's Smog Check Program", which was published in December of 1993 in the Journal of the Air & Waste Management Association (enclosed). The term "clean for a day" refers to the observation that vehicle emissions, as reported on their Smog Check inspection certificates, appear to be low only on the day of the scheduled test. We cannot explain all the reasons why this occurs. Some possible factors include motorists' desires to "pass the test" by asking the mechanic to make the car "pass the test" rather than repair it; mechanics' unwillingness or inability to repair vehicles; and motorists modifying their vehicles to "pass the test".

Real-world data clearly show that vehicles, in a sense, have become like people, in that they "pass the test". All the reasons for this observation are unclear. Existing data from EPA's tamponing surveys as well as California's random roadside surveys all point to the same observation—I/M programs have been relatively ineffective in reducing in-use emissions from motor vehicles, contrary to what the EPA and California emission models say.

My analyses have been subjected to peer review and have been published in scientific literature. Until our analyses were performed, there was little, if any, analysis of the effectiveness of I/M programs that was subject to scientific scrutiny. In some situations, those who were responsible for designing I/M programs also evaluated program effectiveness. This is a clear conflict of interest, and given the influence of mobile source emissions on our nation's air quality, it is critical that the next generation of I/M programs be effective in reducing emissions at the lowest cost to the nation's citizens.

Question 2: In your March 24 testimony before this Subcommittee, you state that remote sensing correlates well with the IM240 when the tests are given the same day. This was in direct conflict with testimony given by Mr. Austin. Please give the data and analysis in support of your statement.

Answer: There are four data sets that I am aware of where remote sensing measurements and IM240 measurements were made on the same day. The first data set

collected was during the 1991 Rosemead study, collected in Los Angeles. The figure titled "1991 Rosemead Study" is a plot of the average of two remote sensing carbon monoxide readings vs. IM240 carbon monoxide readings for 78 vehicles that were testing during a ten-day period. This graph shows good correlation between remote sensing readings and IM240 measurements when vehicles are tested on the same day. The second study was conducted in Michigan in 1992 by the U.S. automobile manufacturers, and it was patterned after our 1991 study. The third study was carried out in Nevada last summer, and the fourth study was conducted in May 1995 in Orange County, California. I do not have data from the Michigan study; the Nevada and Orange County studies were conducted by our group at Desert Research Institute, but the data have been analyzed completely. All the studies show the same feature: when remote sensors are used to identify high emitters, they are able to properly identify them greater than 90 percent of the time.

In five separate studies we have coordinated in California and Nevada since 1989, when we have used remote sensors to identify high carbon monoxide or hydrocarbon-emitting vehicles, more than 90 percent of them fail the idle tests or IM240 tests when the stopped vehicles are given those tests on the same day. In the 1991 Rosemead study, of the 76 vehicles that were identified by remote sensors as high emitters and given an IM240 test, 73 failed the IM240 test. The three vehicles that passed the IM240 test failed the two-speed idle test, however, showing that the IM240 test falsely passes some high emitters. Our additional analyses show that no test is "perfect"—each test misses high emitters, especially when cars have variable emissions. This phenomenon of emissions variability, present in vehicles with defective emission control systems, appears to be most prevalent in today's high-tech vehicles. Emissions testing programs that test vehicles only once every one or two years are just as likely to miss these vehicles as they are to identify them as having emissions control system problems.

Question 3: EPA has testified that tampering data shows centralized programs are more effective than decentralized programs in controlling tampering. Yet you testified that an analysis of this data shows very little difference in tampering between centralized programs, decentralized program and areas with no I&M program. For the record, please submit your data and analysis in support of your statement. Was this study peer reviewed or the data quality assured? If there is no difference in tampering rates, what does this tell us about the effectiveness of I&M in general?

Answer: We have recently completed our analysis of data collected by EPA from 1985–1990 in its national tampering surveys. Our analysis of this 44,000 vehicle data set shows that there is little difference in tampering and overall failure rates between centralized and decentralized program areas in the U.S., and that vehicles in non-I/M program areas have tampering and overall failure rates only marginally higher than vehicles from I/M program areas. Tampering rates are given as the percentage of the fleet that EPA has identified with emission control systems that have been tamperod with; overall failure rates are the percentage of vehicles that fail the roadside inspection for any reason, including visual/functional control system inspections as well as emissions readings. This information is shown in the following table.

Tampering and Overall Failure Rates—EPA Motor Vehicle Tampering Surveys 1985-1990

[In Percent]

	Tampering Rates	Overall Failure Rates
Program Type:		
Centralized Programs	17.3	41.8
Decentralized Programs	17.9	42.3
No Program	20.6	42.6
Model Year Technology:		
1985–1990	3.1	14.1
1980–1984	17.1	45.9
Pre-1980	49.1	86.9

The data have been thoroughly screened and checked for completeness by the EPA. Because we have just completed these analyses, the complete results have not been subjected to peer review, but we have already published some of the results in a peer-reviewed journal. When we make adjustments to the data to account for age and odometer readings of the different fleets, we still see very little difference among program types, as I showed to the Committee in my presentation on March

These analyses demonstrate that I/M programs, regardless of program type,

have not been very effective in reducing either tampering or emissions from mobile sources in the United States.

Question 4: You state that with regards to CO and HC, IM240, ASM and BAR90 idle tests all perform "within 10 percent of finding the molecules that cause the pollution". Please provide the data and analysis for this conclusion. What is the significance of this finding? Given the fact that all three testing methods were effective at measuring HC and CO, what range would you expect the reductions to be in the El Monte study if an idle test was used instead of IM240?

Answer: To respond to the first portion of this question, I am enclosing a memo we wrote to the California Air Resources Board and Bureau of Automotive Repair regarding our analysis data collected during the recent El Monte pilot study, which was supposed to test the effectiveness of ASM and IM240 testing to reduce emissions. We have presented these data to the California I/M Review Committee and in other meetings since that time. The data demonstrate that the IM240, ASM and BAR90 emissions tests are nearly equivalent for measuring at least 50-60 percent of the CO and HC emissions, and that the IM240 and ASM tests are nearly equivalent for measuring NO_x emissions. I believe this comes from the fact that even among failing vehicles, there is a very skewed emissions distribution—a large amount of pollution comes from just a few vehicles. About 70 percent of vehicles that fail emissions tests are only "marginal" emitters: vehicles whose emissions are only slightly above the standards; we have shown previously that more than half of these "marginal" emitters have higher emissions after repairs in California's Smog Check program (see enclosed paper titled "The Costs of M in I/M ").

There is no question 5.

Question 6: Did the El Monte study show that a centralized testing program was superior to decentralized?

Answer: No. The El Monte study did not show that a centralized testing program was superior to decentralized. It showed the potential of a centralized testing and centralized repair program, especially when mechanics knew their performance was being monitored closely by a government agency and where costs of repair were not a constraint. The most unique feature of the El Monte study was that it was a centralized air program. There are no data from any centralized dynamometer testing program from anywhere in the U.S. that demonstrate the effectiveness of such programs. The only demonstration of effectiveness of centralized programs is in EPA's and California's emission models, which are not supported by any real-world data. Other data collected by the Los Angeles District Attorney's office show that mechanics using the idle tests achieve as large a reduction in emissions as the El Monte study results, when the mechanics know their performance is being evaluated by a government agency and costs of repair are not a determining factor in the amount of repairs to be performed.

Question 7: Mr. Austin testified before this Subcommittee that the El Monte study reduced emissions by more than 30 percent. It was also stated that this study was a real world study that was indicative of what reductions could be achieved with a centralized IM240 test program. Do you agree?

Answer: No. There were large emission reductions reported in the El Monte program, as Mr. Austin stated, but the experiment was not conducted under real-world conditions. First, the mechanics in the study were expert mechanics, having training and experience not found in most garages where I/M repairs are performed. Their salaries were much higher than average mechanics are paid. Second, the mechanics were told to repair the cars so that emission reductions would be obtained in order to pass the test, without interaction with the owner of the vehicle. There are two important effects of this interaction: the mechanics were told to repair the vehicle rather than make it "pass the test"; and the repair was done without regard to cost. Third, the mechanics were told that a $500 cost limit should apply to each vehicle for repairs. The average cost of repairs in the El Monte study for vehicles in the El Monte study was about $370, a much higher value than is reported from any I/M program anywhere. Fourth and most important, however, is the fact that the motorist was taken out of the equation in the El Monte analysis. Our analysis of current I/M programs shows that when motorist behavior is included as a component of I/M programs (and it probably is the most important component), overall I/M program effectiveness is much less than the EPA and California emission models report.

Question 8: If your thesis of "clean for a day" is correct, how would this affect the on-road emission reductions predicted in the El Monte study?

Answer: As I stated in my answer to the previous question, human behavior was neglected in the El Monte study. This appears to be the most important determinant in the success of I/M programs. Therefore, actual emission reductions ob-

tained from a centralized IM240 test program (which does not have centralized repairs) would be far less than model predictions.

Question 9: Mr. Austin testified that IM240 variability is relatively a small problem. Do you agree?

Answer: No. Emissions variability from vehicles is a very significant problem, and this phenomenon has been introduced by high-tech cars. Defects in the computerized emission control systems and their related components appear to be the cause of this variability. As an example, figure 3 from my paper titled "The Costs of M in I/M" enclosed with this response gives the variability in CO emissions as measured by the IM240 test using EPA's own data. These data show little scatter between IM240 tests when run in the laboratory and IM240 tests from the inspection lane for clean vehicles, but extremely large variability for higher emitting vehicles. Because emissions variability is such a significant problem, it is just as likely for a high-emitting vehicle with variable emissions (we call them "flippers") to accidently pass the test as it is for them to fail. Scheduled emissions testing would therefore miss a large percentage of such vehicles.

There is no question 10.

Question 11: Do you believe that IM240 can be cheated on? Would the "clean for a day" phenomenon be a problem with a centralized IM240 test program?

Answer: Yes. It is possible to cheat on the IM240 test, just as it has been possible to cheat on all other types of testing. What is needed is a survey of mechanics to find out how they could cheat on that test. All existing real-world data suggest that human behavior is the major factor in the lack of demonstrated success of I/M programs; therefore cheating on the test will continue regardless of the test type. If it becomes more difficult to cheat on the test, motorists will find additional ways to simply avoid the test, such as registering the vehicle outside the program area or simply not registering the vehicle at all. I have observed both types of program avoidance in my analyses of real-world data. As I/M programs become more costly in terms of time and money, those programs will create even greater incentives on the part of motorists to cheat. Therefore, the "clean for a day" phenomenon would still exist in any program until incentives become positive for both the motorist and the mechanic.

NOTE: Publications referred to are retained in the Commerce Committee's files.

U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515–6115

April 18, 1995

Mr. Thomas Getz
Director- Air Pollution Control Division
Colorado Department of Public Health
and Environment
4300 Cherry Creek Drive S.
Denver, Colorado 80222-2000

Dear Mr. Getz:

On March 24, 1995, Mr. Bill Babirad testified before the Subcommittee on Oversight and Investigations concerning his personal experiences and observations on the effectiveness of the testing procedure know as IM240. That testimony also made reference to the conduct of specific private parties and state officials.

In order to provide a full and accurate hearing record, the Subcommittee by unanimous consent agreed to grant those individuals referenced in Mr. Babirad's testimony an opportunity to respond. In order to be included in the written record, all responses must be in the form of sworn written statements. In addition, any such statements must be received by the Subcommittee no later than 30 days from the date of this letter. Please direct any response to the attention of Ms. Darlene McMullen, Chief Legislative Clerk, 2125 Rayburn House Office Building, Washington, D.C. 20515.

If you should have any questions, please feel free to contact Mr. Stephen Sayle of the Commerce Committee at (202) 225-2927.

Sincerely,

Joe Barton
Chairman
Subcommittee on Oversight
and Investigations

cc: The Honorable Ron Wyden
Ranking Minority Member
Subcommittee on Oversight
and Investigation

NOTE: Response not received at time of publication.

U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515–6115

April 18, 1995

Mr. R. J. Hicks
Colorado Department of Revenue
140 West 6th Avenue
Room 108
Denver, Colorado 80204

Dear Mr. Hicks:

On March 24, 1995, Mr. Bill Babirad testified before the Subcommittee on Oversight and Investigations concerning his personal experiences and observations on the effectiveness of the testing procedure know as IM240. That testimony also made reference to the conduct of specific private parties and state officials.

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Sincerely,

Joe

Joe Barton
Chairman
Subcommittee on Oversight
and Investigations

cc: The Honorable Ron Wyden
Ranking Minority Member
Subcommittee on Oversight
and Investigation

NOTE: Response not received at time of publication.

U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515–6115

April 18, 1995

Mr. Ralph Reins
Chief Executive Officer
Envirotest Systems Corp.
2525 East Camelback
Phoenix, Arizona 85016

Dear Mr. Reins:

On March 24, 1995, Mr. Bill Babirad testified before the Subcommittee on Oversight and Investigations concerning his personal experiences and observations on the effectiveness of the testing procedure know as IM240. That testimony also made reference to the conduct of specific private parties and state officials.

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If you should have any questions, please feel free to contact Mr. Stephen Sayle of the Commerce Committee at (202) 225-2927.

Sincerely,

Joe

Joe Barton
Chairman
Subcommittee on Oversight
and Investigations

cc: The Honorable Ron Wyden
Ranking Minority Member
Subcommittee on Oversight and Investigation

Mr. James Cicconi

NOTE: Response not received at time of publication.

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